

U.S. DEPT. OF
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BUREAU OF LAND MANAGEMENT



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MARCH 3, 1995

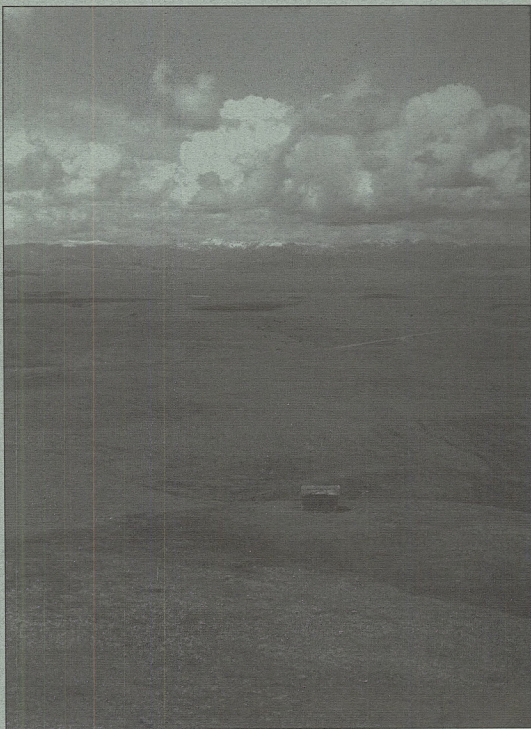


U.S. Department of the Interior
Bureau of Land Management
Worldand District

State of Montana
Department of Environmental Quality
Energy Division

February 1996

EXPRESS CRUDE OIL PIPELINE FINAL ENVIRONMENTAL IMPACT STATEMENT



The Bureau of Land Management is responsible for the balanced management of the public lands and resources and their various values so that they are considered in a combination that will best serve the needs of the American people. Management is based upon the principles of multiple land use and sustained yield; a combination of uses that take into account the long term needs of future generations for renewable and nonrenewable resources. These resources include recreation, range, timber, minerals, watershed, fish and wildlife, wilderness and natural, scenic, scientific and cultural values.

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Dear Reviewer:

This abbreviated Final Environmental Impact Statement (FEIS) on the Express Pipeline Project is provided for your information and use. The Express Pipeline is a 515-mile, 24-inch underground crude oil pipeline from Wildhorse, Alberta, Canada to Casper, Wyoming. This FEIS is a supplement to the Draft Environmental Impact Statement (DEIS) published in August 1995. It incorporates by reference the material presented in the DEIS and identifies changes to the DEIS as a result of additional information and public comments received after the DEIS was published. The FEIS contains comments received on the DEIS and responses to those comments. The full FEIS was not reprinted to avoid publishing costs, and to highlight for the reader the changes that were made.

There will be a 30-day public comment period on the FEIS. The comment period will start on the day the Environmental Protection Agency published the FEIS Notice of Availability in the Federal Register. Persons who wish to comment on the FEIS or express concerns they believe should be considered in the decision should send their comments in writing to: **Bureau of Land Management, Attn: Don Ogaard, Project Manager, Worland District Office, P.O. Box 119, Worland WY 82401, FAX (307) 347-6195; or State of Montana Department of Environmental Quality, Attn: Art Compton, P.O. Box 202301, Helena MT 59629, FAX (406) 444-1804.** Comments received during this period will be considered in the decision making process. The date by which comments must be received is **March 25, 1996.**

This FEIS is not a decision document. Upon expiration of the 30-day comment period, the BLM will analyze the comments received, prepare a Record of Decision (ROD), and make the ROD available to the public. Additionally, the DEIS and FEIS comprise the recommendations and report by the Montana Department of Environmental Quality (DEQ) to the Board of Environmental Review (BER) under provisions of the Montana Major Facilities Siting Act, 75-20-101 MCA. Comments received on the FEIS will be forwarded to the BER. The BER will conduct a hearing to establish a record upon which a decision will be made. This record will consider those criteria set forth in the Siting Act and implementing administrative rules. The analysis and information contained in the DEIS and FEIS will be part of that record. Notice of the hearing process and procedures will be provided to interested parties following submission of the report to the BER.

DEQ recommendations for the Express Pipeline are found in Chapter 3 of this FEIS. The BLM's Preferred Alternative is Alternative 3, Proposed Action as Modified by the Wildlife Timing Alternative. BLM concurs with DEQ's recommendations regarding Montana stream crossings timing and methods; and with Express' request to include the South-Central Montana Alternative as an element of the Proposed Action.

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Please keep this volume of the FEIS for future reference. A copy of the FEIS has been sent to the affected Government agencies and to those who provided comments on the DEIS or otherwise indicated that they wished to receive a copy of the FEIS. Copies of both the DEIS and this FEIS are available for public inspection at the BLM District and Resource Area offices in Havre, Lewistown, and Billings, Montana and Cody, Worland, Lander, and Casper, Wyoming; the Montana DEQ office in Helena, Montana; and city and county libraries in communities along the proposed route.

In Chapter 545, Laws of 1995 (HB 458), the Montana Legislature amended the Montana Antiquities Act to provide for notification to landowners and interested parties regarding cultural resource property determinations made by the Historic Preservation Office. The BLM has provided its recommendations to the State Historic Preservation Office regarding eligibility of cultural sites in Montana affected by the Express pipeline proposal. Some of these eligible sites are located on private lands. The BLM plans to notify individual landowners concerning recommendations about sites on private property. Private landowners who have sites eligible for listing on the National Register of Historic Places have the opportunity to comment on these recommendations affecting their land. Information regarding this law can be obtained by contacting the State Historic Preservation Office in Helena, Montana.

The BLM and DEQ would like to thank the individuals and organizations who provided suggestions and comments on the DEIS. Their help has been invaluable in preparing this FEIS.

Sincerely,



Mark A. Simonich
Director
Montana Department of Environmental Quality



Alan R. Pierson
Wyoming State Director
Bureau of Land Management

**EXPRESS CRUDE OIL PIPELINE PROJECT
ENVIRONMENTAL IMPACT STATEMENT**

() DRAFT

(X) FINAL

Lead Agencies:	Department of Interior Bureau of Land Management	State of Montana Department of Environmental Quality
Cooperating Agencies:	Department of Interior Bureau of Reclamation	U.S. Army Corps of Engineers
Counties Directly Affected:	Montana: Hill, Chouteau, Fergus, Judith Basin, Wheatland, Golden Valley, Stillwater, and Carbon	
	Wyoming: Bighorn, Washakie, Hot Springs, Freemont, and Natrona	
Environmental Impact Statement contact:	Correspondence of this final enviornmental impact statement should be directed to:	

Don Ogaard
Project Manager
BLM Worland District Office
P.O. Box 119
Worland, Wyoming 82401
(307) 347-9871

Art Compton
Project Manager
Montana Department of Environmental Quality
P.O. Box 202301
Helena, Montana 59620
(406) 444-6791

Date final environmental impact statement filed with United States Environmental Protection Agency: February 23, 1996.

Date by which comments on this final environmental impact statement must be received to be considered in the Record of Decision: March 25, 1996.

ABSTRACT

Express Pipeline Inc. (Express) proposes to construct, maintain, and operate a 24-inch crude oil pipeline from the U.S. (Montana)/Canada border near Wild Horse to Casper, Wyoming. The project (the proposed action) would include the 515-mile pipeline, five pump stations, numerous mainline block and check valves, and a meter station. Initially, the pipeline would be capable of transporting 172,000 barrels per day of Canadian crude oil to Casper, Wyoming. Construction is scheduled from July through October, 1996, with operations beginning by late October, 1996.

This final environmental impact statement analyzes the environmental effects of the Express Pipeline, the No Action Alternative, and a Modified Action Alternative involving timing restrictions for construction across rivers and streams; construction techniques across rivers; and construction near raptor nests, key fisheries spawning habitat, and big game winter range. The BLM's selected alternative is the Modified Action Alternative. The MDEQ's selected alternative is the Modified Action Alternative with specified construction techniques for perennial rivers in Montana.

The Managers responsible for preparing the final environmental impact statement are Darrell Barnes, BLM Worland District Manager, and Mark Simonich, Director, Montana Department of Environmental Quality.



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Appendix R Proposed Power Lines for the Express Pump Stations



CHAPTER 1 — INTRODUCTION

The purpose of this Final Environmental Impact Statement (FEIS) is to respond to comments made on the Express Crude Oil Pipeline Draft Environmental Impact Statement (DEIS), issued on August 18, 1995. Reviewed together, the FEIS and DEIS incorporate the analyses of the affected environment and potential environmental consequences of the proposed Express crude oil 24-inch pipeline from the Canadian border, near Wildhorse, Canada, to Casper, Wyoming. During the course of the two-month public review, two major issues were raised concerning the DEIS. First, commentators noted that the socioeconomic analysis was deficient concerning the potential economic impacts of the Express pipeline on Wyoming oil prices, exploration, and the Wyoming tax base. Second, some commentators believed that alternative methods should be explored for construction methods to cross rivers and streams in Montana.

As a result of these comments, further analyses were undertaken. First, the Bureau of Land Management (BLM) and the Montana Department of Environmental Quality (MDEQ) contracted an independent economic analyst to evaluate the potential impacts, if any, of the Express pipeline on Wyoming oil prices, future exploration efforts, and the Wyoming tax base. Next, an intensive analysis of Montana stream crossing techniques was conducted by the MDEQ, Express Pipeline, and Express Pipeline consultants. As a result of this analysis, alternative methods have been proposed for some Montana streams and crossings.

The remaining chapters and appendices of this FEIS provide the changes and additional information developed in response to comments received on the DEIS. Chapter 2 presents the summary of changes and additions made as a result of comments and additional or corrective data received. Chapter 3 describes the recommendations, based on the DEIS and FEIS, that the MDEQ will present to the Montana Board of Environmental Review. The following appendices have been added or updated with new information:

- 1) Appendix D contains the updated list of wetlands along the Express route. The updated list was prepared for Express' Nationwide 404 Permit application, submitted to the U.S. Army Corps of Engineers.
- 2) Appendix L is the final, approved copy of the Cultural Resources Programmatic Agreement for the Express pipeline project. This appendix replaces Appendix L in the DEIS, which contained the draft Programmatic Agreement.
- 3) Appendix N is a summary of the economic analysis, prepared by Planning Information Corporation, Denver, Colorado. The analysis evaluates the potential impacts of the Express pipeline on Wyoming oil prices, future exploration, and effects on the Wyoming tax base.

4) Appendix O is the Stream Crossings Techniques section, which describes the site-specific conditions of the major water bodies crossed in Montana by the proposed pipeline. This section also evaluates four types of stream crossings that may be employed for the Montana rivers and streams.

5) Appendix P contains an outline of the Spill Prevention, Containment and Control Plan that Express is currently developing. The final SPCCP must be approved by the appropriate federal, state, and local agencies before construction could begin on the pipeline.

6) Appendix Q contains the comments received on the DEIS during the public review period and the agency response to the comments. The comments are published verbatim with the exception of copyrighted material such as magazine articles.

7) Appendix R describes the proposed locations of the power lines which would provide electrical power for the five pump stations along the Express route. The appendix also describes the potential environmental impacts of the proposed power lines.

CHAPTER — 2 SUMMARY OF CHANGES AND ADDITIONS

Revisions have been made based on the 161 comments received concerning the Express Pipeline DEIS. Also, this chapter contains corrections and additions to the text of the DEIS that were made to respond to these comments.

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S-4 4 4	OK.	After "...would occur" insert "along the pipeline right-of-way"
S-8 6 1	Delete first sentence	Replace with the following: "Mainline valves and check valves would be located with spacing in accordance with the provisions of 49 CFR Part 195.260, Valve Locations. The spacing will be approximately 25 miles. The mainline valves would be remotely controlled through the SCADA."
S-10 4 1	Part 195	49 CFR Part 195
S-11 1	OK.	add another bullet: "environmental mitigation and rehabilitation"
S-12 2 7	OK.	Add the following: "If three separate attempts to directionally drill this crossing fail, then DEQ recommends that Express be allowed to pursue using the open trench method. If open trenching is necessary, DEQ requests authority to work further with local, state and federal agencies to place conditions on the timing of construction, to require methods to further reduce sediment production, and approve reclamation of the pipeline right-of-way at the Missouri River crossing. A separate 404 permit would be required for open trenching and would require a separate biological assessment."
S-17 Table S-1 2	Entire route would be resurveyed for active raptor nests in the spring of 1996.	The portions of the route with suitable habitat for raptors would be surveyed in the spring prior to construction.
S-18 Table S-1 1	"Pipeline would be realigned at the Bridger trail (MP 425) in the area of annual celebrations of pioneer migrations."	"Pipeline would be realigned at the Bridger trail (MP 425) in the area of occasional celebrations of pioneer migrations."
S-18 Table S-1 1	OK.	Add the following after "... has been compromised." "as a result of the construction of two pipelines."

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S-18 Table S-1 2	"Pipeline would be realigned at the Bridger trail (MP 425) in the area of annual celebrations of pioneer migrations."	"Pipeline would be realigned at the Bridger trail (MP 425) in the area of occasional celebrations of pioneer migrations."
S-18 Table S-1 2	OK.	Add the following after "... has been compromised." "as a result of the construction of two pipelines."
S-18 Table S-1 4	Socioeconomics - Alternatives 2 and 3	Delete last line "Express pipeline should not affect..." Insert the following: "Express pipeline may cause Wyoming sweet crude prices to decrease by \$1.00 per barrel. Based on current annual sweet crude oil production of 27 million barrels, such a price decrease could result in a loss of \$27 million annually for Wyoming producers of sweet crude. Tax revenues to Wyoming could decrease by \$3.4 million, a decrease of 1.5 percent. Montana production is roughly one-sixth of Wyoming production. Therefore, the indirect effects of the project on Montana from a regional \$1.00 per barrel sweet oil price decrease could be roughly one-sixth of the Wyoming scale of impacts. These impacts could include the following at a minimum: an annual loss of approximately \$4 million of Montana producer income, a loss of nine Montana production employees, and a loss of \$0.5 million per year in total state, local, education, and severance taxes. Oil and gas royalties are a major source of revenue for the Shoeshone and Arapaho Tribes of the Wind River Reservation. Yearly sweet crude production on the reservation is approximately 130,000 barrels, or 2.9 percent of the total crude production. Royalty rates on tribal leases range from 12 to 30 percent, with 18 percent being the most common. A reduction in the sweet crude price of \$1.00 per barrel could potentially reduce tribal royalty revenue by \$23,400 per year. No quantifiable secondary impacts to production or exploration are anticipated because most of the sweet crude is produced as condensate from natural gas wells." "The scenario described above, and detailed in Appendix N, is the most probable result of the construction and operation of the Express pipeline. However, Appendix N

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also points out that the scenario is dependent on the assumptions used for the analysis. If any one of the assumptions prove incorrect, the impacts could be substantially different.

For example, it is possible that the reduction in crude prices may not be confined to sweet crude only. If the price for all Wyoming production would decrease by \$1.00/barrel, annual loss of revenue to the state could approach \$10 million. Direct job loss in oil exploration and production could be 48, with amultiplier effect potentially causing a total job loss of 120. Tribal revenues lost could be approximately \$950,000 per year. Although this scenario is unlikely, the possibility of its occurrence cannot be ruled out."

S-19 Table S-1 1 Alt 2	"The Cultural Resources Programmatic Agreement would determine NRHP eligibility and mitigation to avoid or Excavate."	Add the following: "The Treatment Plan described in the Programmatic Agreement (Appendix L) would assure that impacts to cultural resources are minimized."
1-11 Table 1	OK.	Delete the U.S. Bureau of Land Management Temporary Use Permit requirement.
1-11 Table 1	OK.	Delete the U.S. Bureau of Land Management, Amend the U.S. Department of the Interior right-of-way grant requirement.
1-12	Blank.	Add the following lines to Table 1 under U.S. Government: Agency - Western Area Power Administration Permit/Authority - Encroachment permits Agency Action - Issue an encroachment permit for crossing electrical transmission lines Agency - U.S. Department of Transportation Permit/Authority - Highway crossing permit Agency Action - Issue a permit for crossing federally funded highways Agency - U.S. Department of Treasury, Bureau of Alcohol, Tobacco and Firearms Permit/Authority - Explosives permit Agency Action - Issue a permit for handling explosives.
1-12 Table 1	OK.	Delete the U.S. Bureau of Reclamation, Easement for irrigation district crossing requirement.

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1-13 Table 1	Montana boards of county commissioners for Hill, Chouteau, Fergus County, Judith Basin, Upper and Lower Musselshell, Stillwater, and Carbon conservation Districts	Montana county commissioners for Hill, Chouteau, Fergus, Judith Basin, Wheatland, Golden Valley, Stillwater and Carbon counties.
1-13 Table 1	Hill County, Big Sandy, Chouteau, Fergus County, Judith Basin, Upper and Lower Musselshell, Stillwater, and Carbon conservation Districts	Hill, Big Sandy, Chouteau, Fergus, Judith Basin, Upper Musselshell, Stillwater, Sweetgrass, and Carbon conservation districts.
1-13 Table 1	Wyoming Highway Department	Wyoming Department of Transportation
1-14 Table 1	OK.	Under Wyoming Office of Historic Preservation, Agency Action, delete "and FERC".
1-14 Table 1	OK.	Under Wyoming State Engineer's Office, Surface water appropriation permit, Agency action should be "Consider issuance of a license to appropriate surface water."
1-14 Table 1	OK.	Under Wyoming county commissioners, delete the requirement for floodplain permits.
2-24 3	Entire paragraph.	Delete the entire paragraph and insert the following:

"Express proposes to control its communication system from a central control facility in Sherwood Park, Alberta, Canada. The system is being developed as part of the overall pipeline control system. Communications would be accomplished through one of four options. The following four options are listed without any preference or priority:

Fiber Optic Cable

Express would install an end-to-end fiber optic cable in the pipeline trench during construction. All pump stations and block valves would be connected to the cable for communications with the SCADA host. A small pedestal would be installed at each pump station and block valve. A dial up feed to the fiber optic cable end most distant from the SCADA host would provide a back up in case the integrity of the fiber link is lost because of damage.

Leased Line

Express would primarily use existing telephone lines to provide the communications link between the SCADA host and the pump stations. Radio antenna towers, ranging from 10 to 64 feet in height, would be installed at block valves to effect communications to the nearest pump station. Depending on the height and configuration of the towers, guy wires may be installed to support the towers. Where feasible, all guy wires would be grounded within the boundary of the chain-link fenced facility. Line extensions would be required at locations not presently equipped to provide the necessary communication links.

Satellite

Express would install satellite dishes at each pump station to provide communication between the SCADA host and the pump stations. The satellite dishes would be located on the right-of-way in close proximity to the pump stations. Radio antenna towers, ranging from 10 to 64 feet in height depending on the intervening terrain, would be installed at block valves to effect communications to the nearest pump station. Depending on the height and configuration of the towers, guy wires may be installed to support the towers. Where feasible, all guy wires would be grounded within the chain-link fenced boundary of the facilities.

Microwave

Express would install microwave towers at each pump station to provide line-of-sight communication between each pump station. The microwave towers would range from 64 to 200 feet in height depending on the intervening terrain. Guy wires would be installed to support the microwave towers. Radio antenna towers, ranging from 10 to 64 feet in height depending on the intervening terrain, would be installed at block valves to effect communications to the nearest pump station. Depending on the height and configuration of the towers, guy wires may be installed to support the towers. Where feasible, all guy wires would be grounded within the chain-link fenced boundary of the facility.

2-24
4
1

delete "a maximum spacing of 25 miles and in accordance with DOT regulations."

Insert "spacing in accordance with the provisions of 49 CFR Part 195.260, Valve Locations. The spacing will be approximately 25 miles."

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2-24 4 4	Delete text beginning with the sentence "Summarizing the more salient....." to the end of the paragraph.	Insert the following: The provisions of 49 CFR 195.260 indicates valves must be installed at the following locations: 1) On the suction end and the discharge end of a pump station in a manner that permits isolation of the pump station equipment in the event of an emergency. 2) On each line entering or leaving a breakout storage tank in a manner that permits isolation of the tank area from other facilities. 3) On each mainline at locations along the pipeline system that will minimize damage or pollution from accidental hazardous liquid discharge, as appropriate for the terrain in open country or for populated areas. 4) On each lateral takeoff from a trunkline in a manner that permits shutting off the lateral without interrupting the flow in the trunk line. 5) On each side of a water crossing that is more than 100 feet wide from high-water mark to high-water mark unless the Secretary finds in a particular case that valves are not justified. 6) On each side of a reservoir holding water for human consumption.
2-34 2 1	OK.	Add "and rangeland" after "In cultivated and improved areas"
2-34 3 6	Reclamation and Revegetation Plan, included as ? To this EIS.	Preliminary Rehabilitation Plan, included as Appendix B to this EIS.
2-35 4 11	(?)	, included as Appendix B to this EIS.
2-37 1 2	On cultivated and improved lands	Delete.
2-37 5 3	OK.	Add after low or non-existent. "Construction periods to cross rivers and streams would vary according to the size of the river or stream as follows:

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- major river (100 feet wide or greater) would last one to two weeks.

- major stream (10 to 100 feet wide, average depth greater than two feet) would last about two to six days depending on whether blasting would take place, and

- minor stream (width less than ten feet, average depth less than two feet) construction would be complete in one to two days.

These construction times reflect the total time from equipment set-up to backfilling the trench and clean-up. The actual time "in the water" would be less in most circumstances."

2-39
2
6

OK.

Add "and designated species of special concern" after species

2-41
5
5

Carbon County, Wyoming

Carbon County, Montana

2-42
1
4

OK.

add after "re-contoured":
"topsoil would be respread,"

2-42
3
5

OK.

Add after last sentence in paragraph:

"Express has proposed boring all canals along the route unless conditions would render boring not feasible. If soil conditions at the time of construction do not allow for boring, and there is flow in the canal, Express proposes to divert the flow beyond the excavation so that no disruption of flow would occur".

2-43
1
6

?

Appendix B, Preliminary Rehabilitation Plan.

2-43
3
2

?

Appendix B, Preliminary Rehabilitation Plan.

2-44
3

OK

Insert the following after "....successive hydrostatic test sections":

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8		"but could not be transferred across the Yellowstone/Missouri River drainage divide without Montana DNRC approval."
2-46 4 4	"...patrolling the right-of-way weekly"	"...patrolling the right-of-way bi-weekly".
2-48 1 8	(?)	Appendix B.
2-48 2 11	Authority	Administration
2-49 1 1	OK.	add "conducted by Dan Nebel of Terracon, Billings, Montana" after Express
2-49 1 4	"Thus, from Milepost 112.0,..."	Delete the entire sentence and replace with: "Thus, from about Milepost 112.0, the proposed route swings east and generally follows a ridge along an existing two-track vehicle trail to the top of Arrow Creek Bench. The pipeline route crosses a small landslide in this area."
2-51 3 5	OK.	Insert the following after the sentence ending "...in these re-enactments." Although the visual integrity of the trail has been somewhat compromised at the proposed crossing by modern intrusions, such as sagebrush spraying, at this location it is one of the physically best-preserved portions of the Bridger Trail in either the Lander or Platte River Resource Areas."
2-51 5 4	OK.	Insert the following sentence after ".....and 30 April." "The wildlife timing restriction in the crucial big game winter ranges applies to the period from the commencement of right-of-way clearing to backfilling of the trench. There are no objections to construction-related activities performed by small work crews from November 15 to April 30."
2-54 2 1	OK.	Insert the following after the first sentence ending "...the proposed action." "As with all action alternatives, there would be no construction in big game parturition habitat from May 1 to June 30."

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2-54 2	OK.	Add the following paragraph after paragraph 2: "DEQ has no objection to work which would not contribute sediment to streams after October 1 and supports this general concept. Stream specific timing restrictions are given in Appendix O. After October 1, DEQ will ask the Board to require Express to notify the state inspector three days in advance of any work which would contribute sediment to a stream. If DEQ review and consultation with MDFWP indicates that such work would not interfere with fish spawning or incubation of fish eggs it would be allowed. Such a condition has been used successfully on past projects."
2-54 4	Entire paragraph.	Delete entire paragraph and replace with: Under this alternative, Express would construct, operate and maintain the pipeline similar to the proposed action. Express would be limited to crossing perennial streams in Montana during the low flow period during the summer and fall. Appendix O describes the streams and crossing locations comprising this variation.
2-55 Table 3	Table 3.	Delete entire Table 3. Appendix O contains all the pertinent and detailed information on Montana perennial stream crossings.
2-59 Table 4 2	Entire route would be re-surveyed for active raptor nests in the spring of 1996.	The portions of the route with suitable habitat for raptors would be surveyed in the spring prior to construction.
2-60 Table 4 Row 1 Col 3	"Pipeline would be realigned at the Bridger trail (MP 425) in the area of annual celebrations of pioneer migrations."	"Pipeline would be realigned at the Bridger trail (MP 425) in the area of occasional celebrations of pioneer migrations."
2-60 Table 4 Row 1 Col 3	OK.	Add the following after "... has been compromised." "as a result of the construction of two pipelines."
2-60 Table 4 Row 2 Col 3	"Pipeline would be realigned at the Bridger trail (MP 425) in the area of annual celebrations of pioneer migrations."	"Pipeline would be realigned at the Bridger trail (MP 425) in the area of occasional celebrations of pioneer migrations."
2-60 Table 4 Row 2 Col 3	OK.	Add the following after "... has been compromised." "as a result of the construction of two pipelines."

2-60
Table 4
4

Socioeconomics - Alternatives 2
and 3

Delete last line "Express pipeline should not affect..."

Insert the following:

"Express pipeline may cause Wyoming sweet crude prices to decrease by \$1.00 per barrel. Based on current annual sweet crude oil production of 27 million barrels, such a price decrease could result in a loss of \$27 million annually for Wyoming producers of sweet crude. Tax revenues to Wyoming could decrease by \$3.4 million, a decrease of 1.5 percent.

Montana production is roughly one-sixth of Wyoming production. Therefore, the indirect Montana project effects from a regional \$1.00 per barrel sweet oil price decrease could be roughly one-sixth of the Wyoming scale of impacts. These impacts could include the following at a minimum: an annual loss of approximately \$4 million of Montana producer income, a loss of nine Montana production employees, and a loss of \$0.5 million per year in total state, local, education, and severance taxes.

Oil and gas royalties are a major source of revenue for the Shoeshone and Arapaho Tribes of the Wind River Reservation. Yearly sweet crude production on the reservation is approximately 130,000 barrels, or 2.9 percent of the total crude production. Royalty rates on tribal leases range from 12 to 30 percent, with 18 percent the most common. A reduction of in the sweet crude price of \$1.00 per barrel could potentially reduce tribal royalty revenue by \$23,400 per year. No quantifiable secondary impacts to production or exploration are anticipated, because most of the sweet crude is produced as condensate from natural gas wells.

The scenario described above, and detailed in Appendix N, is the most probable result of the construction and operation of the Express pipeline. However, Appendix N also points out that the scenario is dependent on the assumptions used for the analysis. If any one of the assumptions prove incorrect, the impacts could be substantially different.

For example, it is possible that the reduction in crude prices may not be confined to sweet crude only. If the price for all Wyoming production would decrease by \$1.00/barrel, annual loss of revenue to the state could approach \$10 million. Direct job loss in oil exploration and production could be 48, with a multiplier effect

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			potentially causing a total job loss of 120. Tribal revenues lost could be approximately \$950,000 per year. Although this scenario is unlikely, the possibility of its occurrence cannot be ruled out."
2-61 Table 4 1 Alt 2	"The Cultural Resources Programmatic Agreement would determine NRHP eligibility and mitigation to avoid or excavate."	Delete. Add the following: "The Treatment Plan described in the Programmatic Agreement (Appendix L) would assure that impacts to cultural resources are minimized."	
3-3 Table 5 1	Description of slope intensity.	Column 3 heading should be "Description of Slope Instability"	
		The milepost references and descriptions of slope instability should be 416.7 to 417.2 at West Kirby Creek. The description should read "An area of active slumping to the west of the proposed Express pipeline has been avoided by routing the pipeline up a stable sloping bench."	
3-13 5 5	"... have the same classification..."	".....have the same water quality classification.."	
3-14 3 3	The sites of the proposed crossings for the largest of these streams have been evaluated for scouring associated with a 100-year flood.	The sites of the proposed crossings for the largest of these streams have been evaluated for lateral and bed scour potential associated with a 100-year flood.	
3-37 Table 11 1	Milk River	Columns 3 through 7 for the Milk River should be: Bed Scour - 16 feet; Active Channel Width - 455 feet; Right Bank Distance - 435 feet; Left Bank Distance - 310 feet; Deep Burial Length - 1200 feet.	
		Delete Footnote 3 and Note.	
3-38 2 5	OK.	Add: "An infiltration gallery is a horizontal well or trench in the alluvium below the depth of the riverbed. Water is not drawn directly from the river. Rather, it is drawn through the alluvium beneath the river bed."	
3-38 2 6	Delete sentence "Both water intake..."	Replace with the following: "Ryegate is about 22 river miles downstream of the pipeline crossing, and Laurel is about 10 river miles downstream."	

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3-38 4 5	same classification	same water quality classification
3-39 Table 12 16	Unnamed Drainage channel width is 150	channel width should be 0
3-39 Table 12 2	Flow class is 7	Flow class should be E
3-39 Table 12 3	Flow class is 7	Flow class should be E
3-40 Table 12 11	Kirby Creek State Fishery class is V	class should be IV
3-40 Table 12 7	Unnamed Drainage channel width is 100	channel width should be 0
3-41 Table 12	Note 2.	Replace Note 2 with the following: ² <u>Wyoming State Fishery classifications:</u> Class I: Premium trout waters - fisheries of national importance. Class II: Very good trout waters - fisheries of statewide importance. Class II: Important trout waters - fisheries of regional importance. Class IV: Low production trout waters - fisheries frequently of local importance, but generally incapable of sustaining fishing pressure. Class V: Very low production trout waters - often incapable of sustaining a trout fishery.
3-41 Table 12	Delete Wyoming Water Classification definitions.	Replace with the following: ¹ <u>Wyoming Surface Water Classes (WDEQ 1990)</u> Class I: Those surface waters in which no further water

		quality degradation by point source discharges other than from dams will be allowed.
		Class II: Those surface waters, other than those classified as Class I, which are determined to support game fish; or have hydrologic and natural water quality potential to support game fish; or to include nursery areas or food sources for game fish.
		Class III: Those surface waters, other than those classified as Class I, which are determined to be presently supporting nongame fish only; or to have the hydrologic and natural water quality potential to support nongame fish only; or to include nursery areas or food sources for nongame fish only.
		Class IV: Those surface waters, other than those classified as Class I, which are determined to not have the hydrologic or natural water quality potential to support fish and include all intermittent and ephemeral streams. Class IV waters shall receive protection for agricultural uses and wildlife watering.
3-41 Table 12 17	Twelvemile Draw (Upper) State Water Use Class is UV	Class should be IV
3-46 Table 15	OK.	The second sentence in the footnote should read, "The maximum potential scour depth in bedrock is estimated to be one foot".
3-48 1 1	"However, the main source of water for Lovell is the Shoeshone Municipal pipeline, which transports water from the Buffalo Bill Reservoir west of Cody, Wyoming".	Delete text and replace with: "An Express representative contacted an official for the Town of Lovell, Wyoming on November 17, 1995. The official indicated that the five water supply wells previously used for miscellaneous purposes are now abandoned and are longer in use. The town now receives all of its water supply from the Shoeshone Municipal Pipeline, which transports water from the Buffalo Bill Reservoir near Cody, Wyoming."
3-57 2 1	"In addition to the state law, the Montana Legislature"	"Montana law"
3-57 6 1	crucial winter year-long range	crucial winter/year-long range

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LINE

TEXT IS

TEXT SHOULD BE

3-60 2 4	CYWL	crucial winter/year-long range
3-60 2 7	CYWL	crucial winter/year-long range
3-63 6 2	OK.	To distinguish between the town site and the river, insert "the town of" before Powder River.
3-70 4 1	Entire first sentence.	Change the first sentence to read, "Several federally-listed threatened or endangered species potentially occur along the proposed Express pipeline route."
3-70 6 1	Pole Mountain	Pine Mountain
3-88 2 5	The proposed pipeline is near the first oil well drilled in Wyoming in 1884 near Lander.	Deleted
4-2 6 3	Table 6	Table 5
4-3 Table 28	"West Kirky Creek"	Delete references to West Kirby Creek, lines 2 and 3 in Table 28
4-4 6	Passing within five miles of.....impact less than significant.	Passing within five miles of active or potentially active surface faults is a significant hazard only if fault movement would result in liquefaction-induced ground movement, principally lateral spreading and flow slides, of a magnitude sufficient to rupture the pipeline. The pipeline in this reach is not located in liquefiable soils or along unstable slopes that would dramatically fail as a result of the projected fault movement.
4-12 2 all	Entire paragraph.	Delete entire paragraph. Replace with the following: "For streams and rivers in Montana having designated floodplains (see Table 10, Chapter 3), Express would be required to place the pipeline twice the estimated depth of scour for the 100-year flood below the minimum thalweg for the stream or river and at a minimum of four feet deep. Calculated scour depth for some of the designated

4-12 and 4-13
6
all

Entire paragraph.

floodplains are shown in Table 11 in Chapter 3. Estimated depths of bed scour are three to eight feet for most of the designated floodplains. Geotechnical investigations of the Milk River crossing indicates a maximum scour depth of 16 feet below the minimum bed elevation in the alluvial materials for the 100-year flood event.

Delete entire paragraph. Replace with:

"In order to protect groundwater resources, which are vital for public and private supply systems, Express would conduct pre- and post-construction monitoring of any wells or springs within 100 feet of the right-of-way. After the right-of-way has been approved, Express would determine whether any wells or springs are within 100 feet of the right-of-way. The survey would be conducted by checking state well records, agency records, and personal communication with private landowners. Baseline field surveys of each well or spring would include a visual estimate of flow and water clarity, and field measured temperature, electrical conductivity, and pH. The results of these surveys would be filed with the agencies before construction commences. After construction is complete, the wells and springs would be surveyed again for the same parameters to determine if construction has caused any impacts on the ground water.

In the unlikely event that post-construction monitoring shows that construction had an adverse effect on the groundwater, Express would provide for an emergency potable water source and for the necessary repairs, replacement, and/or relocation of the affected facilities to restore the supply system to its former capacity. Before construction begins, protocols would be developed for determining how compensation would be provided to landowners in the event damage does occur as a result of pipeline construction, including measures that would be taken if it were not technically possible to restore a well to its original capacity and not possible to install a new well."

4-14
1
4

OK.

Insert the following after the sentence "...Milk and Judith Rivers."

"At the proposed crossing of the Milk River, the river is closed to new consumptive uses year round. Any water diverted for hydrostatic testing that is not returned to the Milk River mainstem is considered a new use and would not be allowed under Montana water law. However, Express maybe able to obtain hydrostatic test water from a well or

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TEXT SHOULD BE

		may be able to purchase water from existing water right holders subject to obtaining authorization from Montana DNRC to change the use."
4-14 1 7	Withdrawals of water from the Milk and Judith Rivers could have an impact if construction occurs during a dry year.	Withdrawal of water from the Judith River could have an impact if construction occurs during a dry year.
4-14 3 2	OK.	Add to end of first sentence in the paragraph: " or wetlands if close to the discharge location."
4-15 4 4	OK.	Insert "portions of" before "this study"
4-15 5 1	delete first and second sentences.	Replace with the following: "The cost to directionally drill were estimated by Express' consultant to be \$1,041,000 more than for open-cut trenching. Based on current information, Express' consultant believes it is technically feasible to directionally drill the Yellowstone River."
4-16	entire page.	Delete entire page
4-17 2	Delete paragraph 2.	Insert new paragraph 2 as follows: "An oil spill in or near major rivers or streams would have a significant impact to water quality. The degree of impact would depend on the location containment basins, volume and rate of spill, streamflow, stream gradient and turbulence, type of stream bottom, response time, and the effectiveness of cleanup. During low flow, oil spilled into the rivers and streams would be more concentrated in a smaller area downstream from the location of the spill. Water would be contaminated from the hydrocarbon content and result in significant effects to fish, riparian vegetation, and terrestrial wildlife whose habitat would be adjacent to water. If a spill would occur during periods of high flow, the contamination would spread to greater distances, but the concentration of hydrocarbons in the water could be less at any given downstream location.
4-17 3	OK.	Add the following two paragraphs after paragraph 3. "The Town of Ryegate withdraws water from the Musselshell River through an infiltration gallery, which is a horizontal well or trench in the alluvium below the depth

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TEXT SHOULD BE

		of the riverbed. The pipeline crossing is located 22 river miles upstream from the location where Ryegate withdraws its water. Therefore, the chances of sedimentation produced during construction, when the flow will be low, affecting the town's water supply are small.
		The MDEQ does recommend that block and check valves be installed on either side of the river to reduce the potential for a pipeline rupture to affect water quality on the Musselshell River that may affect a public water supply.
4-18 1 1	OK.	Insert "Minimal or trace" before Emissions.
4-18 1 2	"Electric pump stations"	Delete. Change "electric pump stations" to "electrically driven pumps".
4-18 2 4	"..valves."	Delete "valves" and insert "sites along the pipeline route".
4-18 6 2	However, fugitive emissions would be attributable to the evaporation of leaked crude oil from valves, flanges, and pump seals.	However, trace fugitive VOC emissions would be attributable to the evaporation of crude oil leaked from pump seals or sump tanks.
4-18 6 2	".. shutoff valves"	Change "shutoff valves" to "mainline block valves".
4-20 4 2	OK.	Insert "and operational" after construction.
4-20 5 2	"electric pump stations"	"the electrically driven pumps"
4-23 5 1	OK.	Add following after the first sentence: "Contractors would also be required to clean their equipment when leaving noxious weed infected areas."
4-24 3	"...approximately 30.2 acres of wetland..."	"...approximately 35.1 acres of wetland..."

PAGE
PARAGRAPH
LINE

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TEXT SHOULD BE

1

4-24

Table 17

Table 16

3

2

4-24

OK.

Add the following sentence after the first sentence in the paragraph:

3

2

"The 35.1 wetland areas affected by construction would be the maximum. The total disturbance could be less because of the following: the pipeline would be re-routed along Ross Fork Creek; five crossings of the East Fork Roberts Creek would be reduced to one; Arrow Creek would be directionally drilled; and the Yellowstone River may be directionally drilled."

4-24

"...approximately 7.1 acres of wetland..."

"...approximately 18.5 acres of wetland..."

3

5

4-24

"...at the Yellowstone River (4.5 acres)..."

"...at the Yellowstone River (3.5 acres)..."

4

4

4-24

OK.

Insert sentence after the sentence ending "...River (1.9 acres)."

4

5

"If the Yellowstone River is directionally drilled rather than trenched, only 1.5 acres of riparian forest would be removed."

4-24

OK.

Add after ...drainage channel. "The increased potential for the trench to act as a drainage channel would generally be a temporary construction-related impact. During construction, potential drainage areas over the trench would be plugged where feasible. The short construction period across wetlands would help ensure that no significant, long-term drainage would occur".

6

4

4-25

OK.

Add the following after the first sentence in the paragraph: "404 Nationwide permit applications have been submitted to the Corps of Engineers offices in Helena, Montana and Cheyenne, Wyoming."

3

1

4-25

OK.

Add the following paragraph after the third paragraph: "Although unlikely, it is possible that other Section 404 permits may be required. A section 12 permit may be required for individual pipeline crossings of streams and rivers. A section 13 permit may be required if complex

3

		bank construction is required to prevent erosion on any river or stream. A section 14 permit may be required for construction of a road crossing a river or stream. A section 26 permit may be required for the discharge of water into headwaters or isolated waters. Finally, a section 33 permit may be required for temporary construction associated with a river crossing."
4-25	"....to less than 75 feet....."	".....no less than 75 feet"
5		
1		
4-28	The wildlife species that would be most directly affected by the clearing of riparian areas would be those interior species that require large tracts of unfragmented habitat to ensure breeding and nesting success.	Change sentence as follows: The wildlife species that would be most directly affected by the clearing of riparian areas would be those species that require woody habitat for breeding and nesting success.
2		
4		
4-28	OK.	Insert the following paragraph after paragraph 2: "Communication towers and antennas installed at pump stations and mainline block valves may affect birds and waterfowl, especially near waterbodies and wetlands. These species may collide with the towers and guy wires during inclement weather such as fog, low cloud, precipitation, or high winds; during migration; or at night. The latest information concerning bird collisions with power lines was compiled by the Avian Power Line Interaction Committee (APLIC 1994). The thrust of the study was to determine the factors involved with bird in-flight collisions with power lines. Other studies (Avery et. al. 1980) demonstrate that birds also collide with communication towers. Factors influencing collisions of birds with man-made structures include habitat use, time of day, weather and land use. For example, more collisions may occur when a tower is located between habitat types, i.e., wetland and upland. More collisions occur during reduced visibility in rain and fog, especially at night. Aircraft warning lights placed on structures are thought to disorient migrating birds. However, it appears that a red warning light attracts and disorients birds more than a white light (APLIC 1994). Cultivated crops are seasonably attractive to birds when in close proximity to wetlands. Collisions may also occur when birds make daily flights between wetlands and
2		

agricultural fields.

A communication option using 64 to 200 foot microwave towers at each pump station, and 10 to 64 foot antennas at mainline block valves, would have the greatest impact on migrating birds and waterfowl. The 200-foot towers could have the greatest impact because of the height and the greater number of guy wires. Methods to mitigate this effect could include helical wraps on the guy wires to make them more visible to birds.

The communication options to use telephone lines or satellite dishes at the pump stations would have a lesser effect. Only the smaller 10 to 64 foot antennas would be used at the mainline block valve block locations, which would be at major river crossings, environmentally sensitive areas, and approximately at 25 to 30 mile intervals per DOT regulations.

The fiber optics cable communication option would have no effect on birds or waterfowl because towers or antennas would not be required."

4-29
1
3

Crucial Year Round Winter
Range

Crucial winter/year-long range

4-29
5
3

"would minimally disturb"

"would disturb"

4-31
2
1

entire first sentence

Delete the entire first sentence and insert the following sentence:

"The pipeline route will be surveyed prior to construction where suitable habitat exists for raptor nests."

4-31
2
3

OK.

Add after "...chicks have fledged....":

"The appropriate agencies would be consulted on the approval of route realignments and modifications of the work plan. If routing changes occur outside the BER approved 500-foot wide route in Montana, then an ammendment to the Certificate would be required."

4-31
Table 29

OK.

Add the following two footnotes:

1. Sources: Mary Jennings, Biologist, USFWS, Cheyenne, Wyoming, personal communication, 1995; and Dennis Flath, Nongame Biologist, Montana Department of Fish, Wildlife, and Parks, Bozeman, Montana, personal

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		communication, 1995.
		2. Dates only indicate the average fledging dates, which could vary depending on weather conditions.
4-33 1 1	Crucial Year Round Winter Range	crucial winter/year-long range
4-33 2 6	Delete the sentence "The entire pipeline....."	Replace with the following: "The portions of the pipeline with suitable habitat will be surveyed for raptor nest in the spring prior to construction."
4-35 2 2	Delete references to Valley Creek and the North and South Fork of Bluewater Creek.	Add the following sentence to the end of paragraph 2: "Construction timing restrictions are found in the new Stream Crossing Techniques Section (Appendix O)."
4-35 3 all	entire paragraph	Delete entire paragraph.
4-35 4 8	Express' proposed crossing of the Greybull, Bighorn, and Nowater Rivers may.....	Express' proposed crossing of the Greybull and Bighorn Rivers may.....
4-37 2 1	OK.	Add the following sentence after the first sentence: "Some smaller fish may be entrained."
4-37 3 4	OK.	Insert "small" before spills.
4-38 5 all	Paragraph 5 on bottom of page 4-38 continuing to the top of page 4-39.	Delete entire paragraph and replace with: "As a part of the river and stream crossing evaluations, the MDFWP has indicated that they would prefer, and DEQ would recommend to the Board, that river and stream crossings be completed between August 1 and November 15 unless indicated in Appendix O. Additional timing restrictions to protect spawning brown and brook trout are given in Appendix O."
4-42	OK.	Add the following paragraph after the first paragraph: In August, 1995, Westech completed a helicopter aerial survey of the proposed pipeline route in Montana. Westech had previously surveyed this route for Altamont in 1992.

The altitude of the helicopter was from 50 to 300 feet above the ground for the entire survey. No prairie dog colonies were found from the Canadian border to Milepost 198. Two colonies were found intersecting the right-of-way near MP 198, a few miles south of Shawmut, Montana. The size of the combined colonies was only 17.5 acres. This colony had decreased from approximately 82 acres as surveyed in 1992. Apparently, this colony has been controlled by the landowner. Another colony was found near MP 278, about seven miles east of Bridger, Montana. The size of this colony was about 32 acres. This colony had decreased from approximately 284 acres as surveyed in 1992. Like the other colony, this colony appeared to have been controlled by the landowner. A seven-kilometer area around these colonies was flow to check for other colonies which may form a complex colony. No other prairie dogs were found.

Based on the 1995 Westech survey and conversations with the USFWS in Montana, no further surveys for black-footed ferrets will be required in Montana. In Wyoming, the route still has to be surveyed.

4-43 Delete entire paragraph.
3
all

Replace with the following paragraph:
"Bald eagles occur as migrants and may winter in Wyoming along the Greybull and Bighorn Rivers, Nowater Creek, and Pine Mountain."

4-44 Delete first sentence
5
1

Replace with the sentence "A pre-construction survey will be conducted in the spring prior to construction in suitable habitat for the peregrine falcon."

4-45 OK.
2
1

Insert "or qualified wildlife biologist" after "inspector."

4-45 OK.
4
1

add the following to the end of the first sentence:
"except in the event of a spill"

4-45 Delete the sentence "The entire
5 pipeline route....."
3

Replace with the following sentence:
"A pre-construction survey will be conducted in suitable habitat (sand and gravel bars or beaches of lakes and rivers) for the piping plover."

4-45 "There would be no construction
5 within 0.5 miles of active piping

Delete entire sentence.

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TEXT SHOULD BE

6	plover nests from February 1 to August 31 to allow for nesting and rearing".	
4-46 1 1	"The entire pipeline route would be re-surveyed for all types of raptor nests, including least terns, in the spring of 1996."	Delete the entire sentence and replace with: "A pre-construction survey will be conducted in suitable habitat (broad expanses of unvegetated river channels, unvegetated sandbars, suitable levels of water, and adequate supply of small fish) for the least tern."
4-46 1 3	"There would be no construction within 0.5 miles of active piping plover nests from February 1 to August 31 to allow for nesting and rearing".	Delete entire sentence.
4-46 3 4	Delete the sentence "The entire pipeline route would be re-surveyed for all types of raptor nests, including mountain plover nesting sites, in the spring of 1996."	Replace with the sentence "A pre-construction survey will be conducted in suitable habitat for the mountain plover."
4-46 3 7	OK.	Add the following after "..... the integrity of the nests": Mitigation of active nests on public lands would be conducted on a case-by-case basis in consultation with the BLM and the USFWS. Avoidance of active nests would not be required on private lands in Wyoming. In Montana, DEQ recommends that construction be deferred in areas with active mountain plover nests until young have fledged if surveys of suitable habitat find nesting birds.
4-49 5 3	"electric pumping stations"	"electrically driven pumps"
4-50 5 2	The project would also cross the Green River approximately 0.8 miles northwest of the Seedskaadee NWR.	Delete the entire sentence.
4-52 3 2	Delete sentence "Because Fresno Lake..."	Replace with "Fresno Lake is approximately 10 miles downstream of the proposed crossing of the Milk River and would not be affected by construction noise or activities."
4-52	Delete entire sentence	Replace with the following sentence:

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3			"The Coalbanks Landing State Recreation Area (approximately MP 76) would experience minor recreational impacts because of the noise and construction activities during the two to three week period when the Missouri River is directionally drilled."
3			
4-53	OK.		Add the following paragraph: "After construction is complete, permanent service roads to pump stations and mainline valves would slightly increase dispersed recreation opportunities for hunting, fishing, wildlife viewing, and camping. However, because many of these roads would be on private land, public access would be limited."
1			
4-53	"The alternative route would be visible during annual celebrations..."		The alternative route would be visible during occasional celebrations..."
2			
2			
4-53	OK.		Insert "Mainline block" before "valves".
6			
1			
4-53	OK.		Insert the following after "New pump stations,": " 64 to 200 foot towers at pump stations, 10 to 64 foot antennas at mainline block vavles."
6			
1			
4-53	"electric pumping stations"		"electrically driven pumps"
6			
4			
4-53	OK.		Insert "mainline block" before "valves"
6			
5			
4-54	Entire first sentence.		Delete the first sentence and replace with: "New structures, such as pump stations with 64 to 200 foot communication towers, mainline block valves with 10 to 64 foot towers, and signs, would become a part of the landscape on the proposed route. However, if Express would install a fiber optics communication system, the towers and antennas would not be required and the visual effects would be much less. "
5			
5			
2	Mainline valves typically consist of a vertical loop of the pipeline that extends approximately four feet out of the ground with the		Delete the entire sentence.

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TEXT SHOULD BE

	valve at the top of the loop.	
4-54 5 4	OK.	Insert "block" after "mainline"
4-56 4 5	"However, a reenactment of original pioneer migration is celebrated annually on the Old Bridger Trail."	"However, a reenactment of the original pioneer migration is celebrated occasionally on the Old Bridger Trail."
4-56 4 7	"Vegetative rehabilitation in this area is rated poor, which would result in a longer time to reclaim the vegetation."	"Vegetative rehabilitation potential at the Bridger Trail crossing is rated fair to good based on a reevaluation of the soil map units and the orthophoto project sheet for the proposed route. Therefore, vegetative rehabilitation of the Bridger Trail crossing should be within normal timeframes."
4-57 1 2	"The alternative route would be visible during annual celebrations..."	The alternative route would be visible during occasional celebrations..."
4-63 1 1	OK.	Insert "operational" before "field".
4-63 3 2	OK.	Add "per spread" after "day".
4-68 5 and 6	Both paragraphs.	Delete paragraphs 5 and 6. See Appendix N for the potential economics impacts of the Express pipeline project on oil exploration and production, and associated revenue and taxation.
4-69	OK.	Insert the following after Figure 13: "Per Executive Order 12898, "Federal Actions to Address Justice in Minority Populations and Low-Income Populations", signed February 11, 1995, the Proposed Action was evaluated for issues relating to the social, cultural, and economic well-being, and health of low income groups. Such issues are termed environmental justice issues, and none were identified for the Express Pipeline project. Social and economic impacts of the Proposed Action would not affect minority or low income groups disproportionately."
4-72 3	OK.	Delete "or directional drilling".

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2

4-72
3
4

OK.

Insert "and where the setting is not previously compromised" after "NRHP".

4-73
6

Entire paragraph.

Delete the entire paragraph and insert the following:
"A complete listing and discussion of hazardous materials is included in the Express Plan of Development and Spill Prevention, Control and Containment Plan. Both documents are nearly complete and would need to be approved by the applicable federal, state and local agencies before construction would start. The following is an estimate of the hazardous materials and quantities which would be used to construct the Express pipeline."

1) 4,000,000 gallons of gasoline, diesel fuel, oil grease, lubricants, antifreeze and battery acid,

2) 50,000 pounds of oxygen, acetylene, propane, and nitrogen,

3) 100,000 pounds of fusion bond epoxy coating, resin, and liquid epoxy coating,

4) 500 gallons of paints, base coats, and thinners,

5) 750,000 pounds of explosives, and

6) 50,000 pounds of detonators.

4-78
2
2

Delete the sentence "The mainline block valves..... 100 feet downstream".

Replace with the following:
"The mainline block valves would be located, wherever feasible, at minimum distances of 100 feet upstream of major river crossings, or in geographical locations closest to road and power access. Check valves would be located similarly at a downstream location."

4-78
2
5

Delete the sentence "The block valves would be remotely operated."

Replace with the following:
"The mainline block valves would be remotely operated at all major river crossings and other select points."

4-78
4

OK.

Insert the following after the first sentence:
"Express would conduct bi-annual inspections of the entire pipeline. These inspections would be conducted visually using very low level helicopter and on the ground inspections. The entire route would be overflown in a helicopter. In environmentally sensitive areas such as river

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		crossings, wetlands, and landslide prone areas, the helicopter would hover very near the ground to closely observe the conditions. Where permission is granted by the individual land owner, an on-the-ground walking inspection would be conducted in these sensitive areas whenever the airborne visual inspection revealed potential problem areas."
4-78 4 3	These inspection measures....	The aircraft inspection....
4-78 4 5	immediately	as soon as possible
4-78 5 3	Delete the sentence "The electrical outputs....." and the sentence "The performance..."	Replace with the following: "The electrical outputs of the rectifier installations would be inspected monthly while the performance of the cathodic protection system would be monitored by maintaining a record of rectifier voltage and current readings."
4-79 2 all	Entire paragraph deleted.	"The pipeline would be remotely operated and controlled from a central control center in Sherwood Park, Alberta, Canada, using the Communications, Supervisory Control and Data Acquisition (SCADA) computer system. Twenty-four hours a day and 365 days a year, personnel at the center would continuously control crude oil flow in the pipeline, monitor operating conditions at all pump stations and other critical locations, and provide leak detection monitoring for the pipeline. Every minute, the SCADA system would calculate the volumetric balance with line pack compensation from Hardisty to Casper. The nine pump stations (four in Canada and five in the U.S.) and the Casper meter station would be monitored remotely from the control center. If an accidental pipeline leak did occur, the loss of pressure would be detected within minutes by the control room technician monitoring the SCADA system. If a major rupture (loss of at least 50 percent of the flow at a point) occurred in the line, the control room technician monitoring the SCADA system would also detect an oil loss within minutes. A smaller leak (one percent of the flow at a point) could take a number of hours to detect depending on the size of the leak. It should be noted that inherent to leak detection systems, smaller leaks take longer to detect than larger leaks. However, the amount of liquid at risk of being spilled can be very similar. Based on an expected Express pipeline

volume of 172,000 barrels per day, the following is an example of comparing the potential spill with a small leak and a rupture:

172,000 barrels per day / 24 hours per day = 7,167 barrels per hour

7,167 barrels per hour / 60 minutes per hour = 119 barrels per minute

A 50 percent leak would spill 59.5 barrels per minute.

A one percent leak would spill 1.19 barrels per minute.

A 50 percent leak would take about seven minutes to detect, and 418 barrels could potentially spill.

A one percent leak would take about six hours to detect, and 428 barrels could potentially spill.

After detection, the technician would verify the leak, next shut down the pump stations, and then close the valves to isolate the location of the spill. If any crude oil would back flow, the check valves would automatically detect the reversal and automatically shut down. The entire line could be shut down in 10 to 15 minutes after detection. Personnel would be immediately dispatched to the spill location and the Spill Prevention, Containment and Control Plan would be implemented immediately."

4-82 Delete all text beginning with "If
2 evidence of Holocene...."
3

Replace with the following:
"If evidence of Holocene surface displacement is found, Express would implement appropriate design measures, which depend upon many factors including the age of the last fault movement, frequency, displacement, and fault type. Appropriate design measures may include a V-shaped trench, granular backfill, heavy-walled pipe, avoidance of anchoring appurtenances such as mainline block valves, concrete anchor blocks, or simple monitoring."

4-82 Delete entire sentence.
3
1

Replace with:
"In big game winter range and sage grouse habitat, seed mixes that include forbs and shrubs would be used in addition to the native grasses."

4-83 delete the text "and additional
4 temporary work space"
1

Insert the new sentence after the end of the first sentence:
"Temporary work space may be required at some river crossings."

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TEXT SHOULD BE

4-83 4 3	OK.	Add the following text to the end of the sentence "However, at no time....." "unless permission is granted from the appropriate agency based on a site specific drawing."
4-83 6 1	OK.	Add the following to the end of the first sentence: "where practicable."
4-83 6 5	OK.	Add following to end of the sentence "Boulders that have...": "unless otherwise specified by the land owner".
4-83 7 1	Delete the entire first sentence.	Replace with the following sentence: "The pipeline route has been re-routed around rock outcroppings wherever practicable."
4-85 2 1	Cenex Inc. (Cenex) plans to construct	Cenex Inc. (Cenex) is constructing
4-89 1 9	Last two sentences in paragraph.	Delete last two sentences and insert the following: "The Express Cultural resources Treatment Plan (Appendix L) and the other three Treatment Plans required by federal law would assure that impacts to cultural resources are minimized."
5-1	Greg Hautz	Greg Bautz
7-1 9	OK.	Add the following references: APLIC 1994. Avian Power Line Interaction Committee. Mitigating Bird Collisions with Power Lines: The State of the Art in 1994. Edison Electric Institute. Washington, D.C. Avery 1980. Avian Mortality at Man-Made Structures: An Annotated Bibliography (Revised), FWS/OBS-80/54, July 1980. Michael L. Avery, National Power Plant Team, U.S. Fish and Wildlife Service, Ann Arbor MI; Paul F. Springer, Wildlife Research Field Station, U.S. Fish and Wildlife Service, Arcata CA; and Nancy S. Daily, Ecological Sciences Information Center, Oak Ridge TN.
7-2	Boutz, Greg	Bautz, Greg
B-1 1	OK.	Add the following paragraph: "The material in this appendix is necessarily generalized.

For Public Lands, the measures described, including the seed mixes, need for fertilizer application, and construction and topsoil salvage techniques, should be considered as suggested or representative only. The site-specific reclamation standards for Public Lands segments will be determined in the Plan of Development."

B-1 2 4	OK.	Add the following sentence after the sentence ending "... (ARM 36.7.3011(9))." "For Public Lands, reclamation would generally follow the standards set forth in the Bureau of Land Management Manual 3042."
B-30 3 12	WAE = wind erosion hazard	WAE = water erosion hazard
B-31 2 5	Erosive Soils	Erodible Soils
B-37 3 9	Entire first sentence.	Delete the entire sentence and insert the following sentence: "Topsoil replacement should not commence until the subsoil/substratum has been properly prepared by deep ripping/chisel plowing first."
Appendix G Title page	Title Page	Title should read: "Report of Investigations, Scour Analyses, Altamont Gas Transmission Company, Prepared by HKM Associates, Billings, Montana, Dan Nebel, Project Manager.

Minor corrections and additions have been made to Table 8. The corrected Table 8 follows.

Table 8 Perennial, Intermittent and Ephemeral Drainages Crossed by the Express Pipeline Route in Montana

WATER BODY	MILEPOST	LOCATION	CHANNEL WIDTH ¹ (FT)	WETLAND WIDTH ² (FT)	STATE WATER USE CLASS ³	STATE FISHERY CLASS ⁴	FISH SPECIES ⁵	FLOW CLASS ⁶
<u>MILK RIVER ABOVE FRESNO RESERVOIR SUB-BASIN</u>								
Spring Coulee	0.70	SE SEC 2 T37N R11E			B-3			
Unnamed	2.2	NW SEC 14 T37N R11E						
Unnamed	3.4	W ½ SEC 23 T37N R11E						
Unnamed	3.6	SE SEC 23 T37N R11E						
Unnamed	6.3	NE SEC 2 T36N R11E						
Unnamed	7.0	NE SEC 11 T36N R11E						
Milk River	8.23	NE SEC 14 T36N R11E	170	70	B-3	IV	LC(A),LS(A)WCK(A), NR(A),LD(C)BS(C), NP(U)WM(U),FC(U), FM(U),W(U)RT(R), LW(R),YP(R),B(R), BM(R),ES(R)SC(R), SR(R),ID(R),MC(R)	P
Unnamed	9.5	W SEC 24 T36N R11E						
Unnamed	10.0	SW SEC 24 T36N R11E						
Unnamed	11.5	NW SEC 36 T36 R11E						
North Branch Seven Mile Coulee	12.2	NW SEC 1 T35N R11E						
South Branch Seven Mile Coulee	12.6	W SEC 1 T35N R11E						
Unnamed Pond	14.5	W SEC 13 T35N R11E						
Ninemile Coulee	14.90	SW SEC 13 T35N R11E	0	15	B-3			
Archie Coulee	17.0	SW SEC 25 T35N R11E						
Unnamed Tributary Archie Coulee	17.2	NW SEC 36 T35N R11						
Unnamed	17.8	SW SEC 36 T35N R11E						
Unnamed	18.5	NW SEC 1 T34N R11E						
Unnamed	19.9	SW SEC 12 T34 R11E						
Spring Coulee	21.00	SW SEC 13 T34N R11E			B-3			
Dry Lake Coulee	23.72	SW SEC 36 T34N R11E			B-3			
Unnamed	24.8	SW SEC 1 T33N R11E						

Table 8 Perennial, Intermittent and Ephemeral Drainages Crossed by the Express Pipeline Route in Montana

WATER BODY	MILEPOST	LOCATION	CHANNEL WIDTH ¹ (FT)	WETLAND WIDTH ² (FT)	STATE WATER USE CLASS ³	STATE FISHERY CLASS ⁴	FISH SPECIES ⁵	FLOW CLASS ⁶
Unnamed	25.1	NW SEC 12 T35N R11E						
<u>SAGE CREEK SUB-BASIN</u>								
Unnamed Pond	30.2	NE SEC 1 T32N R11E						
Sage Creek	32.84	SE SEC 13 T32N R11E	0	16	B-3	IV	SM(C),LC(C)FM(C) WCK(C) BS(C),ID(C)	
Unnamed Tributary Faulkners Coulee	37.2	NW SEC 12 T31N R11E						
Faulkners Coulee	37.6	W SEC 12 T31N R11E			B-3			
Unnamed Tributary Halfway Coulee	40.7	SE SEC 25 T31N R11E						
Halfway Coulee	42	SE SEC 36 T31N R11E			B-3			
<u>BIG SANDY CREEK SUB-BASIN</u>								
Unnamed Tributary Twelve Mile Coulee	50.3	NE SEC 13 T30N R11E						
Twelve mile Coulee	50.79	SE SEC 13 T30N R11	0	20	B-3			
Unnamed Tributary Twelve mile Coulee	51.4	NE SEC 24 T30N R11E						
Unnamed Tributary	58.9	SW SEC 30 T28N R11E						
Unnamed Tributary	59.3	NE SEC 36 T28 R11E						
<u>MISSOURI RIVER FROM MARIAS RIVER TO BULLWHACKER SUB-BASIN</u>								
Coal Banks Coulee	65.09	SE SEC 25 T27N R11E	0	35	B-3			
Unnamed Tributary Missouri River	66.5	NE SEC 1 T26N R11E						

Table 8 Perennial, Intermittent and Ephemeral Drainages Crossed by the Express Pipeline Route in Montana

WATER BODY	MILEPOST	LOCATION	CHANNEL WIDTH ¹ (FT)	WETLAND WIDTH ² (FT)	STATE WATER USE CLASS ³	STATE FISHERY CLASS ⁴	FISH SPECIES ⁵	FLOW CLASS ⁶
Missouri River	68.34	SE SEC 7, T26N R12E	700	18	B-3	1	CC(C),B(C),P(C), CP(C),G(C),FD(C) M(C),SM(C),LD(C), FC(C)ES(C),FM(C), RC(C),LS(C)WCK(C) SB(C),SR(C),SC(C), Si(C),SS(C),YP(U), NP(U),BC(U)BB(U), W(U),MW(U), MC(U),ID(R)PS(R)	P
Arm of Jackson Coulee	71.11	SE SEC 20 T26N R12E	0	13				
Unnamed Tributary to Jackson Coulee	71.7	NE SEC 29 T26N R12E						
Unnamed	72.5	NE SEC 32 T26N R12E						
The Sag	73.60	NE SEC 5 T25N R12E			B-3			
Unnamed	73.8	E ½ SEC 5 T25N R12E						
Unnamed	77.8	NW SEC 29 T25N R12E						
Unnamed	80.3	SW SEC 4 T24N R12E						
Crow Coulee	82.70	NW SEC 21 T24N R12E			B-3			
Unnamed Saline Drainage	82.88		0	20				
ARROW CREEK SUB-BASIN								
Unnamed Pond	83.4	NW SEC 28 T24N R12						
Unnamed Pond	86.8	SW SEC 9 T23N R12E						
Unnamed Saline Drainage	87.85	NE SEC 16 T23N R12E	0	270				
Unnamed Tributary Dammal Reservoir	88.5	NE SEC 21 T23N R12E						
Flat Creek	95.77	NW SEC 27 T22N R12E	0	85	C-3			
Unnamed	95.9	NW SEC 27 T22N R12E						
Unnamed	96.1	NW SEC 27 T22N R12E						

Table 8 Perennial, Intermittent and Ephemeral Drainages Crossed by the Express Pipeline Route in Montana

WATER BODY	MILEPOST	LOCATION	CHANNEL WIDTH ¹ (FT)	WETLAND WIDTH ² (FT)	STATE WATER USE CLASS ³	STATE FISHERY CLASS ⁴	FISH SPECIES ⁵	FLOW CLASS ⁶
Unnamed	96.5	SW SEC 27 T22N R12E						
Phantom Coulee	97.5	NW SEC 3 T21N R12E			C-3			
Unnamed	98.4	SW SEC 3 T21N R12E						
Saline Wetland in Flat Creek	99.71	NW SEC 15 T21N R12E	0	4600				
Saline Wetland in Flat Creek	100.64	NE SEC 21 T21N R12E	0	400				
Unnamed Drainage	101.20	SE SEC 21 T21N R12E	0	3				
Unnamed	101.7	NW SEC 28 T21N R12E						
Unnamed	102.5	SE SEC 28 T21N R12E						
Unnamed	102.7	SE SEC 28 T21N R12E						
Unnamed	103.4	SE SEC 33 T21N R12E						
Unnamed	104.5	SE SEC 3 T20N R12E						
Unnamed	104.8	SE SEC 3 T20 R12E						
Unnamed Drainage	105.35	NW SEC 11 T20N R12E						
Unnamed Drainage	105.52	NW SEC 11 T20N R12E						
Unnamed Drainage	107.00	NE SEC 13 T20N R12E						
Unnamed Drainage	107.60	SW SEC 18 T20N R13E						
Unnamed Drainage	108.30	SE SEC 19 T20N R13E	0	20				
Unnamed Drainage	109.5	NE SEC 29 T20N R13E						
Unnamed	110.2	SE SEC 29 T20N R13E						
Unnamed	110.4	SW SEC 29 T20N R13E						
Arrow Creek	111.15	NE SEC 33 T20N R13E	40	172	C-3			P
Unnamed Tributary to Arrow Creek	111.45	NE SEC 33 T20N R13E	3	0				
Unnamed Tributary to Arrow Creek	111.92	NW SEC 34 T20N R13E	2	7				
Unnamed Tributary to Arrow Creek	112.10	SE SEC 34 T20N R13E	6	0				
Coffee Creek	116.63	SW SEC 23 T19N R13E	6	59	C-3			

Table 8 Perennial, Intermittent and Ephemeral Drainages Crossed by the Express Pipeline Route in Montana

WATER BODY	MILEPOST	LOCATION	CHANNEL WIDTH ¹ (FT)	WETLAND WIDTH ¹ (FT)	STATE WATER USE CLASS ²	STATE FISHERY CLASS ²	FISH SPECIES ³	FLOW CLASS ⁴
Coffee Creek	117.46	SE SEC 26 T19N R13E	8	4				
Unnamed Tributary Coffee Creek	118.6	SW SEC 36 T19N R13E						
Unnamed Tributary Coffee Creek	119.7	SE SEC 1 T18N R13E						
<u>JUDITH RIVER SUB-BASIN</u>								
Unnamed Tributary Wolf Creek	122	SW SEC 18 T18N R14E						
Unnamed Tributary Wolf Creek	122.2	NW SEC 19 T18 R14E						
Wolf Creek	122.40	NW SEC 19 T18N R14E	15	3	C-3		RT(A),M(C)	P
Coyote Creek	123.08	S ½ SEC 19 T18N R14E	20	230	C-3			
Unnamed Tributary Coyote Creek	123.6	SE SEC 30 T18N R14E						
Pacer Coulee	124.91	SE SEC 31 T18N R14E	3	38	C-3			
Unnamed	126.3	NW SEC 8 T17N R14E						
Unnamed	126.4	NW SEC 8 T17N R14E						
Unnamed Coulee	126.92	SW SEC 8 T17N R14E	0	95				
Unnamed	128.4	NE SEC 20 T17N R143						
Unnamed	128.5	NE SEC 20 T17N R14E						
Unnamed	129.1	SW SEC 21 T17N R14E						
Dry Wolf Creek	129.38	SW SEC 21 T17N R14E	148	2	C-3			
Unnamed	129.7	NW SEC 28 T17N R14E						
Unnamed	130.1	SE SEC 28 T17N R14E						
Unnamed	130.2	SE SEC 28 T17N R14E						
Unnamed	130.9	NE SEC 33 T17N R14E						
Unnamed	131.2	SW SEC 34 T17N R14E						
Unnamed	131.8	NE SEC 3 T16N R14E						
Sage Creek	132.30	SE SEC 3 T16N R14E	13	7	C-3		BKT(C)	P

Table 8 Perennial, Intermittent and Ephemeral Drainages Crossed by the Express Pipeline Route in Montana

WATER BODY	MILEPOST	LOCATION	CHANNEL WIDTH ¹ (FT)	WETLAND WIDTH ² (FT)	STATE WATER USE CLASS ³	STATE FISHERY CLASS ⁴	FISH SPECIES ⁵	FLOW CLASS ⁶
Unnamed	133.8	NW SEC 14 T16N R14E						
Unnamed Tributary Squaw Coulee	134.6	SW SEC 14 T16N R14E						
Squaw Coulee	134.68	SW SEC 14 T16N R14E	3	14	C-3			
Indian Creek	135.78	SW SEC 24 T16N R14E	0	80	C-3			
Unnamed Drainage	137.10	NE SEC 36 T16N R14E	0	98				
Louse Creek	138.75	NW SEC 6 T15N R15E	10	22	B-1		BKT(A),LD(A), MC(A)LS(C)	P
Unnamed Drainage	141.23	SE SEC 17 T15N R15E	0	55				
Unnamed Drainage	142.72	NW SEC 28 T15N R15E	0	30				
Unnamed Canal	143.58	SW SEC 28 T15N R15E	5	0				
Unnamed Drainage	143.62	NE SEC 33 T15N R15E	5	285				
Unnamed Drainage	143.67	NW SEC 33 T15N R15E	0	10				
Unnamed Drainage	143.77	NW SEC 33 T15N R15E	0	29				
Seep/Drainage	143.95	NW SEC 33 T15N R15E	0	350				
Judith River	144.12	NW SEC 33 T15N R15E	75	30	B-1	IV	LD(C),LS(C)MS(C), MC(C)RT(U) BRT(U),WCK(U)	P
Unnamed	146.4	SW SEC 8 T14N R15E						
Unnamed Drainage	146.80	NW SEC 15 T14N R15E	3	25				
Pond	147.2	NW SEC 15 T14N R15E						
Hauck Coulee	147.87	NW SEC 22 T14N R15E	4	6	B-1			P
Unnamed Ross Fork Creek	149.5	SE SEC 27 T14N R15E						
Unnamed	151.1	NW SEC 2 T13N R15E						
Unnamed	151.8	SW SEC 2 T13N R15E						
Unnamed	152.3	NW SEC 11 T13N R15E						
Unnamed Tributary Big Coulee Creek	153.0	NE SEC 14 T13N R15E						
Big Coulee Creek	153.10	NE SEC 14 T13N R15E	7	35	B-1		LD(C),NR(P) NX(P)	P

Table 8 Perennial, Intermittent and Ephemeral Drainages Crossed by the Express Pipeline Route in Montana

WATER BODY	MILEPOST	LOCATION	CHANNEL WIDTH ¹ (FT)	WETLAND WIDTH ² (FT)	STATE WATER USE CLASS ³	STATE FISHERY CLASS ⁴	FISH SPECIES ⁵	FLOW CLASS ⁶
Ross Fork Creek	153.72	SE SEC 15 T13N R15E	22	10	B-1		WCK(A),MC(A), LD(C)MS(C),FM(U), LS(U),CH(R), BRT(P),BKT(P)	P
East Buffalo Creek	155.90	SW SEC 25 T13N R15E	9	20	B-1			P
Unnamed	156.5	NW SEC 36 T13N R15E						
Unnamed	156.6	SW SEC 36 T13N R15E						
Unnamed	156.9	SW SEC 36 T13N R15E						
Unnamed	157.1	NE SEC 1 T12N R15E						
Unnamed	157.3	NW SEC 6 T12N R16E						
Dry Creek	157.75	SW SEC 6 T12N R16E	0	15	B-1			P
Unnamed Drainage	158.28	NW SEC 7 T12N R16E						
Unnamed Drainage	158.96	SW SEC 7 T12N R15E						
Unnamed Drainage	159.94	SW SEC 18 T12N R16E						
Unnamed	160.1	NW SEC 19 T12N R16E						
Unnamed	160.9	SW SEC 19 T12N R16E						
Unnamed Drainage	161.32	NE SEC 30 T12N R16E	0	8	B-1			
Unnamed	161.7	SW SEC 30 T12N R16E						
Meadow Creek	162.77	SW SEC 31 T12N R16E	0	116	B-1			P
Unnamed	162.8	SW SEC 31 T12N R16E						
Unnamed	162.9	SW SEC 31 T12N R16E						
Unnamed Tributary Ross Fork	163.8-9	SE SEC 6 T11N R16E						
Unnamed Tributary Ross Fork	164.1	NE SEC 7 T11N R16E						
Abandoned Ross Fork Meander Bend	164.39	NE SEC 7 T11N R16E	0	150				
Ross Fork Creek	164.50	NE SEC 7 T11N R16E	60	90	B-1			P
Unnamed Drainage	164.95	SW SEC 8 T11N R16E	6	6				
Unnamed Drainage	165.69	SW SEC 17 T11N R16E	4	32				

Table 8 Perennial, Intermittent and Ephemeral Drainages Crossed by the Express Pipeline Route in Montana

WATER BODY	MILEPOST	LOCATION	CHANNEL WIDTH ¹ (FT)	WETLAND WIDTH ² (FT)	STATE WATER USE CLASS ³	STATE FISHERY CLASS ⁴	FISH SPECIES ⁵	FLOW CLASS ⁶
<u>MUSSELSHELL RIVER SUB-BASIN</u>								
Unnamed Drainage	167.2	NE SEC 29 T11N R16E						
Unnamed	168.6	NE SEC 32 T11N R16E						
East Fork Creek	170.88	NE SEC 8 T10N R16E	0	159	B-1			
Unnamed	171.3	NE SEC 17 T10N R16E						
Unnamed Drainage	172.25	NW SEC 21 T10N R16E	0	125				
Unnamed Drainage	172.39	NW SEC 21 T10N R16E						
Unnamed	173.4	NW SEC 28 T10N R16E						
Unnamed	173.5	NW SEC 28 T10N R16E						
Tributary to East Fork Roberts Creek	173.58	NW SEC 28 T10N R16E	0	20				
Unnamed	174.8	NE SEC 33 T10N R16E						
Unnamed	174.9	SE SEC 33 T10N R16E						
Unnamed	176.9	SW SEC 10 T9N R16E						
Unnamed	177.0	SW SEC 10 9R R16E						
Unnamed	177.1	SW SEC 10 T9N R16E						
Unnamed	178.0	SW SEC 15 T9N R16E						
Unnamed Drainage	178.41	SE SEC 15 T9N R16E	0	162				
Roberts Creek	179.29	SE SEC 22 T9N R16E	60	37	B-1			P
Unnamed	182	NE SEC 2 T8N R16E						
Alkali Creek	182.56	SE SEC 2 T8N R16E	0	117	B-1			
Unnamed Drainage	185.00	SW SEC 18 T8N R17E						
Unnamed Drainage	185.19	NW SEC 19 T8N R17E						
Unnamed Drainage	185.47	SE SEC 19 T8N R17E						
Unnamed Drainage	185.61	SW SEC 19 T8N R17E						
Unnamed Drainage	185.80	SW SEC 19 T8N R17E						
Unnamed Drainage	185.86	SW SEC 19 T8N R17E						

Table 8 Perennial, Intermittent and Ephemeral Drainages Crossed by the Express Pipeline Route in Montana

WATER BODY	MILEPOST	LOCATION	CHANNEL WIDTH ¹ (FT)	WETLAND WIDTH ² (FT)	STATE WATER USE CLASS ³	STATE FISHERY CLASS ⁴	FISH SPECIES ⁵	FLOW CLASS ⁶
Unnamed Drainage	186.00	SW SEC 19 T8N R17E						
Unnamed Drainage	186.13	SW SEC 19 T8N R17E						
Unnamed Drainage	186.20	SW SEC 19 T8N R17E						
Unnamed Drainage	186.50	NW SEC 29 T8N R17E						
Unnamed Drainage	186.65	NW SEC 29 T8N R17E						
Unnamed Drainage	186.70	NW SEC 29 T8N R17E						
Unnamed Drainage	187.3	SE SEC 29 T8N R17						
Unnamed Drainage	187.61	SE SEC 29 T8N R17E	0	4				
Unnamed Drainage	187.92	NW SEC 33 T8N R17E						
Unnamed Drainage	188.03	NW SEC 33 T8N R17E						
Unnamed Drainage	188.79	SE SEC 33 T8N R17E						
Unnamed Drainage	188.88	SE SEC 33 T8N R17E	0	5				
Unnamed Drainage	189.62	NW SEC 3 T7N R17E						
Unnamed Drainage	189.70	NW SEC 3 T7N R17E						
Unnamed Drainage	189.82	SW SEC T7N R17E						
Unnamed Drainage	189.86	SW SEC 3 T7N R17E						
Unnamed Drainage	189.91	SW SEC 3 T7N R17E						
Unnamed Drainage	189.99	SW SEC 3 T7N R17E						
Unnamed Drainage	190.02	SE SEC 3 T7N R17E						
Unnamed Drainage	190.06	SE SEC 3 T7N R17E						
Unnamed Drainage	190.17	SE SEC 3 T7N R17E						
Unnamed Drainage	190.61	NE SEC 10 T7N R17E	0	9				
Unnamed Drainage	190.83	NE SEC 10 T7N R17E						
Unnamed Drainage	191.42	SW SEC 11 T7N R17E	0	365				
Unnamed Drainage	191.53	SE SEC 11 T7N R17E						
Unnamed Drainage	191.8	NE SEC 14 T7N R17E						
Deadman's Basin Canal	192.62	SW SEC 13 T7N R17E	5	13	B-1			

Table 8 Perennial, Intermittent and Ephemeral Drainages Crossed by the Express Pipeline Route in Montana

WATER BODY	MILEPOST	LOCATION	CHANNEL WIDTH ¹ (FT)	WETLAND WIDTH ² (FT)	STATE WATER USE CLASS ³	STATE FISHERY CLASS ⁴	FISH SPECIES ⁵	FLOW CLASS ⁶
Unnamed Drainage	192.80	SW SEC 13 T7N R17E	3	3				
Unnamed Drainage	193.2	NE SEC 24 T7N R17E						
Highway 12 Ditch (N. Side)	193.84	SE SEC 24 T7N R17E	0					
Musselshell River	194.09	NE SEC 25 T7N R17E	60	142	B-2	III	LD(A),FC(A)WM(C), LS(C)WCK(C) MS(C),RT(U)BRT(U) CP(U),FM(U)SR(U),S C(U)MW(U),NR(P)	P
Unnamed Ditch	194.72	SE SEC 25 T7N R17E	8	56				
Unnamed Drainage	195.7	SE SEC 31 T7N R17E						
Unnamed Drainage	196.28	NE SEC 6 T7N R17E	0	10				
Mud Creek	197.60	SE SEC 6 T7N R17E	10	325	C-3			
Unnamed Drainage	199.9	SW SEC 16 T6N R18E						
Unnamed Drainage	200.76	NE SEC 21 T7N R17E						
Unnamed Drainage	201.18	NW SEC 22 T7N R17E	0	5				
Unnamed Drainage	201.25	NW SEC 22 T6N R18E						
Unnamed Drainage	201.33	NW SEC 22 T6N R18E						
Fish Creek	202.57	NW SEC 26 T6N R18E	14	11	C-3		NR(P),M(P),FC(P), LD(P),LC(P)	P
Unnamed Drainage	203.43	SW SEC 26 T6N R18E						
Unnamed Drainage	203.90	NW SEC 35 T6N R18E						
Unnamed Drainage	206.1	SW SEC 11 T5N R18E						
Unnamed Drainage	206.3	SW SEC 11 T5N R18E						
Unnamed Drainage	206.59	NE SEC 14 T5N R13E	0	8				
Unnamed Drainage	206.99	NE SEC 14 T5N R13E	0	0				
Rock Creek	207.37	SW SEC 14 T5N R13E	0	0	C-3			
Unnamed Drainage	209.91	NE SEC 35 T5N R13E	3	21				
Tributary to Van Winkle Creek	211.23	NE SEC 1 T6N R13E	0	7				

Table 8 Perennial, Intermittent and Ephemeral Drainages Crossed by the Express Pipeline Route in Montana

WATER BODY	MILEPOST	LOCATION	CHANNEL WIDTH ¹ (FT)	WETLAND WIDTH ² (FT)	STATE WATER USE CLASS ³	STATE FISHERY CLASS ⁴	FISH SPECIES ⁵	FLOW CLASS ⁶
Van Winkle Creek	211.52	SE SEC 1 T4N R13E	0	132	C-3			P
Unnamed Trib. N Fork Big Coulee Creek	212.3	NE SEC 12 T4N R12E						
North Fork Big Coulee Creek	212.57	SE SEC 12 T4N R13E	0	0	C-3			P
Unnamed Trib. S. Fork Big Coulee Creek	213.3	NW SEC 18 T4N R19E						
Unnamed Trib. S. Fork Big Coulee Creek	213.5	NW SEC 18 T4N R19E						
Unnamed Trib. S. Fork Big Coulee Creek	213.8	SW SEC 18 T4N R19E						
Unnamed Trib. S. Fork Big Coulee Creek	213.9	SW SEC 18 T4N R19E						
Unnamed Trib. S. Fork Big Coulee Creek	214.1	NW SEC 19 T4N R19E						
Unnamed Trib. S. Fork Big Coulee Creek	214.2	NW SEC 19 T4N R19E						
South Fork Big Coulee Creek	214.22	NW SEC 19 T4N R19E	8	36	C-3		FM(P),LC(P), NR(P),NRB(P)	P
Unnamed Trib. S. Fork Big Coulee Creek	214.7	SE SEC 19 T4N R19E						
Tributary to South Fork Big Coulee Creek	214.80	SE SEC 19 T4N R19E	0	21				
Unnamed Trib. S. Fork Big Coulee Creek	215.6	SE SEC 30 T4N R19E						

Table 8 Perennial, Intermittent and Ephemeral Drainages Crossed by the Express Pipeline Route in Montana

WATER BODY	MILEPOST	LOCATION	CHANNEL WIDTH ¹ (FT)	WETLAND WIDTH ¹ (FT)	STATE WATER USE CLASS ²	STATE FISHERY CLASS ³	FISH SPECIES ⁵	FLOW CLASS ⁶
Unnamed Drainage	215.84	SE SEC 30 T4N R19E	0	0				
Tributary to South Fork Big Coulee Creek	216.4	NW SEC 32 T4N R19E	0	17				
Unnamed Drainage	216.87	SW SEC 32 T4N R19E	0	0				
Unnamed Drainage	216.96	SW SEC 32 T4N R19E						
Unnamed Drainage	217.09	SW SEC 32 T4N R19E	0	0				
Unnamed Drainage	217.13	SE SEC 32 T4N R19E	0	0				
<u>YELLOWSTONE RIVER FROM CLARKS FORK TO BIG HORN RIVER SUB-BASIN</u>								
Unnamed Drainage	217.5	NE SEC 5 T3N R19E						
Unnamed Drainage	219.32	NW SEC 16 T3N R19E	0	322				
Unnamed Drainage	219.65	SW SEC 16 T3N R19E	0	4				
Sixshooter Creek	220.05	SE SEC 16 T3N R19E	0	27	B-2		LC(P)	
Unnamed Drainage	220.1	NE SEC 21 T3N R19E						
Unnamed Drainage	220.2	NE SEC 21 T3N R19E						
Unnamed Drainage	220.25	NE SEC 21 T3N R19E						
Unnamed Drainage	220.3	NE SEC 21 T3N R19E						
Unnamed Drainage	220.95	SW SEC 22 T3N R19E	0	0				
Middle Creek	223.75	SW SEC 36 T3N R19E	2	21	B-2		LC(P)	P
Cedar Creek	225.52	SW SEC 6 T2N R20E	0	11	B-2		LC(P)	P
Unnamed Drainage	226.45	NW SEC 8 T2N R20E						
Gurney Creek	227.56	NE SEC 17 T2N R20E	0	1356	B-2			
Unnamed Drainage	229.55	NE SEC 22 T2N R20E	0	18				
Unnamed Drainage	229.9	SW SEC 22 T2N R20E						
Unnamed Drainage	230.42	SE SEC 22 T2N R20E	0	18				
Unnamed Drainage	230.6	NE SEC 27 T2N R20E						
Struck Creek	233.21	NE SEC 1 T1N R20E	0	128	B-2		M(P)	P
Struck Creek	233.30	NE SEC 1 T1N R20E	0	117				P
Toll Creek	233.95	SW SEC 6 T1N R21E	0	66	B-2		M(P)	P

Table 8 Perennial, Intermittent and Ephemeral Drainages Crossed by the Express Pipeline Route in Montana

WATER BODY	MILEPOST	LOCATION	CHANNEL WIDTH ¹ (FT)	WETLAND WIDTH ² (FT)	STATE WATER USE CLASS ³	STATE FISHERY CLASS ⁴	FISH SPECIES ⁵	FLOW CLASS ⁶
Greenwood Creek	234.49	SE SEC 6 T1N R21E	2	6	B-2			P
Unnamed Drainage	236.13	NE SEC 17 T1N R21E	0	4				
Unnamed Drainage	236.24	NE SEC 17 T1N R21E	0	40				
Unnamed Drainage	237	SW SEC 16 T1N R21E						
Unnamed Drainage	237.9	NE SEC 21 T1N R21E	0	18				
Unnamed Drainage	238.72	SE SEC 22 T1N R21E	3	0				
<u>YELLOWSTONE RIVER FROM BRIDGER CREEK TO VALLEY CREEK SUB-BASIN</u>								
Unnamed Drainage	239.0	NE SEC 27 T1N R21E						
Unnamed Drainage	239.7	SW SEC 26 T1N R21E						
Unnamed Drainage	240.8	SE SEC 35 T1N R21E						
Unnamed Drainage	242.1	NW SEC 8 T1S R22E						
Unnamed Drainage	242.2	NW SEC 8 T1S R22E						
North Fork Valley Creek	243.87	NW SEC 17 T1S R22E	2	3	B-1		MS(P)	P
Unnamed Drainage	243.9	NW SEC 17 T1S R22E						
Unnamed Drainage	244.27	NW SEC 17 T1S R22E						
Unnamed Drainage	244.3	NW SEC 17 T1S R22E						
Unnamed Drainage	244.5	SE SEC 17 T1S R22E						
Unnamed Drainage	246.1	SW SEC 21 T1S R22E						
North Fork Valley Creek	246.42	NW SEC 27 T1S R22E	3	5	B-1		MS(P)	P
Sawmill Gulch	246.77	NW SEC 27 T1S R22E	32	0				
Valley Creek	247.30	SE SEC 27 T1S R22E	0	25	B-1		FM(P), LC(P), LD(P), MS(P), WCK(P)	P
Valley Creek	247.48	SE SEC 27 T1S R22E	16	0	B-1			P
Unnamed Trib. Valley Creek	248.2	NE SEC 34 T1S R22E						

Table 8 Perennial, Intermittent and Ephemeral Drainages Crossed by the Express Pipeline Route in Montana

WATER BODY	MILEPOST	LOCATION	CHANNEL WIDTH ¹ (FT)	WETLAND WIDTH ² (FT)	STATE WATER USE CLASS ³	STATE FISHERY CLASS ⁴	FISH SPECIES ⁵	FLOW CLASS ⁶
Unnamed Trib. Valley Creek	248.5	SW SEC 35 T1S R22E						
Unnamed Trib. Valley Creek	249.3	NW SEC 2 T2S R22E						
Unnamed Trib. Valley Creek	249.6	SE SEC 2 T2S R22E						
Valley Creek	251.34	NW SEC 13 T2S R22E	7	75	B-1		FM(P),LC(P),LD(P), MS(P),WCK(P)	P
Valley Creek	251.78	SW SEC 13 T2S R22E	0	15			FM(P),LC(P),LD(P), MS(P),WCK(P)	P
Cove Ditch	253.10	NE SEC 25 T2S R22E	19	0	B-1			
Big Ditch	253.70	SE SEC 25 T2W R22E	30	0	B-1			
Italian Ditch	254.75	SE SEC 36 T2S R22E	10	15	B-1			
Old Mill Ditch	254.94	SE SEC 36 T2S R22E	10	150	B-1			
Yellowstone River	255.53	NW SEC 6 T3S R23E	700	50	B-1	II	G(A),LS(A),WCK(A) RT(C),BRT(C)B(C), SR(C),MW(C), CC(U),CP(U)SC(U), S(U)	P
Bellion Creek	255.68	NW SEC 6 T3S R23E	8	7				
Unnamed Drainage	257.2	SE SEC 7 T3S R22E						
Unnamed Drainage	258.33	SW SEC 17 T3S R23E	0	10				
Farewell Creek	260.13	NE SEC 29 T3S R23E	0	14	B-1			
Unnamed Drainage	260.57	SW SEC 28 T3S R23E	0	0				
Unnamed Ditch	262.47	NW SEC 3 T4S R23E	2	2				
Unnamed Drainage	262.51	NW SEC 3 T4S R23E	1	6				
<u>CLARK'S FORK YELLOWSTONE RIVER SUB-BASIN</u>								
Free Silver Ditch	262.80	NW SEC 3 T4S R23E	2	2	B-1			
Smith Ditch	262.80	NW SEC 3 T4S R23E	7	4	B-1			

Table 8 Perennial, Intermittent and Ephemeral Drainages Crossed by the Express Pipeline Route in Montana

WATER BODY	MILEPOST	LOCATION	CHANNEL WIDTH ¹ (FT)	WETLAND WIDTH ² (FT)	STATE WATER USE CLASS ³	STATE FISHERY CLASS ⁴	FISH SPECIES ⁵	FLOW CLASS ⁶
Rock Creek	263.26	SW SEC 3 T4S R23E	75	640	B-1	IV	LD(A) BRT(C) MS(U),RT(R)BRT(R)	P
Clawson Ditch	264.06	SE SEC 3 T4S R23E	2	2	B-1			
Unnamed Drainage	264.88	NE SEC 15 T4S R23E	2	2				
Ditch	265.85	SEC 14						
Ditch	265.86	SEC 14						
Ditch	265.9	SEC 23						
Clark's Fork Yellowstone R.	266.33	NE SEC 23 T4S R23E	150	20	B-2	III	G(A),LS(A) B(C),MS(C) SC(C),MW(C)WM(U) LC(U),SR(U)BRT(R), CP(R)S(R)	P
Clark's Fork Meander Channel	266.45	NE SEC 24 T4S R23E	14	3				P
Five Mile Creek	266.86	NW SEC 23 T4S R23E	4	0	B-1			P
Edgar Canal	266.89	SE SEC 24 T4S R23E	1	0	B-1			
Unnamed Drainage	268.10	NW SEC 30 T4S R23E						
Unnamed Drainage	268.23	NW SEC 30T4S R23E						
Unnamed Drainage	268.95	NE SEC 31 T4S R23E						
Unnamed Drainage	269.02	NE SEC 31 T4S R23E						
Unnamed Drainage	269.02	NE SEC 31 T4S R23E						
Unnamed Drainage	269.1	NE SEC 31 T4S R23E						
Unnamed Drainage	269.24	NE SEC 31 T4S R23E						
Unnamed Drainage	269.25	NE SEC 31 T4S R23E						
Unnamed Drainage	269.35	NE SEC 31T4S R23E						
Unnamed Drainage	269.41	NE SEC 31T4S R23E						
Unnamed Drainage	269.47	NE SEC 31T4S R23E						
Unnamed Drainage	269.75	SW SEC 32 T4S R23E						
Unnamed Drainage	269.80	SW SEC 32T4S R23E						

Table 8 Perennial, Intermittent and Ephemeral Drainages Crossed by the Express Pipeline Route in Montana

WATER BODY	MILEPOST	LOCATION	CHANNEL WIDTH ¹ (FT)	WETLAND WIDTH ¹ (FT)	STATE WATER USE CLASS ²	STATE FISHERY CLASS ⁴	FISH SPECIES ³	FLOW CLASS ⁶
Unnamed Drainage	269.90	SW SEC 32 T4S R23E						
Unnamed Drainage	270.13	SW SEC 32T4S R23E						
Unnamed Drainage	270.15	SW SEC 32 T4S R23E						
Unnamed Drainage	270.75	SE SEC 5 T5S R24E						
Unnamed Drainage	270.86	SE SEC 5 T5S R24E						
Unnamed Drainage	271.25	SE SEC 5 T5S R24E						
Unnamed Drainage	271.39	NE SEC 8 T5S R24E						
Unnamed Drainage	271.49	NE SEC 8 T5S R24E						
Unnamed Drainage	271.68	NW SEC 9 T5S R24E						
Unnamed Drainage	271.83	NW SEC 9 T5S R24E						
Unnamed Drainage	272.09	NW SEC 9 T5S R24E						
Unnamed Drainage	272.10	SW SEC 9 T5S R24E						
Unnamed Drainage	272.18	SW SEC 9 T5S R24E						
Unnamed Drainage	272.5	NE SEC 16 T5S R24E						
Unnamed Drainage	272.61	NE SEC 16 T5S R24E						
Unnamed Drainage	272.71	NE SEC 16 T5S R24E						
Unnamed Drainage	272.84	NW SEC 16 T5S R24E						
Unnamed Drainage	273.12	SE SEC 16 T5S R24E						
Unnamed Drainage	273.24	SE SEC 16 T5S R24E						
Unnamed Drainage	273.37	SE SEC 16 T5S R24E						
Unnamed Drainage	273.71	SE SEC 16 T5S R24E						
Unnamed Drainage	273.74	SE SEC 16 T5S R24E						
Unnamed Drainage	273.90	NE SEC 22 T5S R24E						
Unnamed Drainage	273.97	NE SEC 16 T5S R24E						
Unnamed Drainage	274.43	SE SEC 22 T5S R24E						
Unnamed Drainage	274.56	NW SEC 27 T5S R24E	5	0	B-1			
Unnamed Drainage	275.40	SE SEC 27 T5S R24E	3	0				
Unnamed Drainage	276.24	SE SEC 34 T5S R24E						

Table 8 Perennial, Intermittent and Ephemeral Drainages Crossed by the Express Pipeline Route in Montana

WATER BODY	MILEPOST	LOCATION	CHANNEL WIDTH ¹ (FT)	WETLAND WIDTH ² (FT)	STATE WATER USE CLASS ³	STATE FISHERY CLASS ⁴	FISH SPECIES ⁵	FLOW CLASS ⁶
Unnamed Drainage	276.43	SE SEC 34 T5S R24E						
Unnamed Drainage	276.47	SE SEC 34 T5S R24E						
Unnamed Drainage	276.79	NW SEC 1 T6S R24E						
Unnamed Drainage	276.87	NW SEC 1 T6S R24E						
North Fork Bluewater Creek	278.17	NW SEC 12 T6S R24E			B-1			
Unnamed Drainage	278.26	SW SEC 12 T6S R24E						
Unnamed Drainage	278.34	SW SEC 12 T6S R24E						
Unnamed Drainage	278.93	NW SEC 13 T6S R24E						
Unnamed Drainage	279.05	NW SEC 13 T6S R24E						
Unnamed Drainage	279.6	SW SEC 13 T6S R24E						
Unnamed Drainage	279.70	SW SEC 13 T6S R24E						
Bluewater Creek	279.70	SW SEC 13 T6S R24E	6	0	B-1			
Unnamed Drainage	280.03	NW SEC 24 T6S R24E						
Bluewater Creek	280.4	SW SEC 24 T6S R24E	6	0	B-1			
Unnamed Drainage	280.9	NW SEC 25 T6S R24E						
Unnamed Drainage	281.50	SW SEC 25 T6S R24E	7	0				
Unnamed Drainage	281.83	SW SEC 25 T6S R24E						
Unnamed Drainage	281.95	NW SEC 26 T6S R24E						
Unnamed Drainage	282.20	NW SEC 36T6S R24E	5	0				
Unnamed Drainage	282.3	NW SEC 36 T6S R24E						
Unnamed Drainage	282.50	SE SEC 36 T6S R24E						
Unnamed Drainage	282.80	SE SEC 36 T6S R24E	5	0				
Unnamed Drainage	283.18	SE SEC 1 T7S R24E						
Unnamed Drainage	283.39	SE SEC 1 T7S R25E						
Unnamed Drainage	284.5	NW SEC 7 T7S R25E						
Unnamed Ditch	285.1	NW SEC 18 T7S R25E						
Unnamed Drainage	286.3	NE SEC 19 T7S R25E						

Table 8 Perennial, Intermittent and Ephemeral Drainages Crossed by the Express Pipeline Route in Montana

WATER BODY	MILEPOST	LOCATION	CHANNEL WIDTH ¹ (FT)	WETLAND WIDTH ² (FT)	STATE WATER USE CLASS ³	STATE FISHERY CLASS ⁴	FISH SPECIES ⁵	FLOW CLASS ⁶
Unnamed Drainage	286.9	SW SEC 20 T7S R25E						
<u>SAGE CREEK SUB-BASIN</u>								
Sage Creek	287.41	SW SEC 20 T7S R25E	5	0				
Unnamed Drainage	287.6	NW SEC 29 T7S R25E						
Unnamed Drainage	287.7	NW SEC 29 T7S R25E						
Unnamed Drainage	288.9	SE SEC 32 T7S R25E						
Unnamed Drainage	289.1	SE SEC 32 T7S R25E						
Unnamed Drainage	289.4	NE SEC 5 T8S R25E						
Water Canyon Creek	291.07	SW SEC 9 T8S R25E	4	0				
Unnamed Drainage	291.12	SW SEC 9 T8S R25E						
Inferno Canyon	293.46	NE SEC 28 T8S R25E						
Unnamed Drainage	294.75	NW SEC 34 T8S R25E						
Unnamed Drainage	294.86	NW SEC 34 T8S R25E						
King Canyon	295.23	SW SEC 34 T8S R25E	0	1280				
Unnamed Drainage	295.27							
Piney Creek	296.42	SE SEC 3 T9S R25E	4	70			WC(P)	P
Unnamed Drainage	296.9	NE SEC 11 T9S R25E						
Cottonwood Creek	297.71	NW SEC 14 T9S R25E	5	0				
Unnamed Drainage	298.2	SW SEC 14 T9S R25E						
Unnamed Drainage	298.38	SW SEC 14 T9S R25E	2	0				
Unnamed Drainage	298.9	NE SEC 23 T9S R25E						
Unnamed Drainage	299.7	SE SEC 23 T9S R25E						
Unnamed Drainage	299.8	SE SEC 23 T9S R25E						
Bear Canyon Creek	300.33	NW SEC 25 T9S R25E	2	0				
Unnamed Drainage	300.5	NW SEC 25 T9S R25E						
Unnamed Drainage	300.4	NW SEC 25 T9S R25E						
Unnamed Drainage	300.9	SE SEC 25 T9S R25E						
Unnamed Drainage	301.0	SE SEC 25 T9S R25E						

Table 8 Perennial, Intermittent and Ephemeral Drainages Crossed by the Express Pipeline Route in Montana

WATER BODY	MILEPOST	LOCATION	CHANNEL WIDTH ¹ (FT)	WETLAND WIDTH ² (FT)	STATE WATER USE CLASS ³	STATE FISHERY CLASS ³	FISH SPECIES ³	FLOW CLASS ³
Unnamed Drainage	301.05	SE SEC 25 T9S R25E						
Unnamed Drainage	301.3	NE SEC 36 T9S R25E						
Unnamed Drainage	301.82	NW SEC 31 T9S R26E						
Unnamed Drainage	302.07	SW SEC 31 T9S R26E						
Unnamed Drainage	302.28	SE SEC 31 T9S R26E						
Unnamed Drainage	302.5	SE SEC 31 T9S R26E						
Unnamed Drainage	302.65	SE SEC 31 T9S R26E						
Unnamed Drainage	302.66							

Notes:

¹ Channel width includes open water, stream channels with or without flowing water and mud flats based on field surveys in summer and fall 1991.

² Wetland width includes total wetlands on both sides of the stream based on field surveys in summer and fall 1991. Therefore, stream width plus wetlands width indicates stream width at normal high water mark.

³ Montana Water Classification (MDHES 1988a).

B-1: Waters classified B-1 are suitable for drinking, culinary and food processing purposes after conventional treatment; bathing, swimming, and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl, and furbearers; and agricultural and industrial water supply.

B-2: Waters classified B-2 are suitable for drinking, culinary and food processing purposes after conventional treatment; bathing, swimming, and recreation; growth and marginal propagation of salmonid fishes and associated aquatic life, waterfowl, and furbearers; and agricultural and industrial water supply.

B-3: Waters classified B-3 are suitable for drinking, culinary and food processing purposes after conventional treatment; bathing, swimming, and recreation; growth and propagation of non-salmonid fishes and associated aquatic life, waterfowl, and furbearers; and agricultural and industrial water supply.

C-3: Waters classified C-3 are suitable for bathing, swimming, and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl, and furbearers. The quality of these waters is naturally marginal for drinking, culinary and food processing purposes, agriculture and industrial water supply.

Degradation that will impact established beneficial uses will not be allowed.

Note: The Montana water use classification ranges from A-closed to C-3 (Class A waters are the highest quality). There are no Class A waters crossed by the Express Pipeline.

⁴ In Montana, State Fishery Class I streams provide exceptional habitat for outstanding populations of species of high interest. Class II streams provide moderate habitat for highly valued species and exceptional habitat for less highly valued species. Class III streams provide substantial habitat for highly valued species and moderate habitat for less valued species. Class IV streams have moderate fishing resources (Montana Department of Fish, Wildlife and Parks, 1980).

⁵ Fish Species Codes: Sources: Montana Department of Fish, Wildlife and Parks, 1995.

RT: Rainbow trout	BKT: Brook trout	BRT: Brown trout	WC: westslope cutthroat	LW: Lake whitefish
YP: Yellow perch	NP: Northern pike	CC: Channel catfish	B: Burbot	P: Paddlefish
CC: Common carp	G: Goldeye	M: Minnow -unclassified	SM: Silvery minnow	RC: River carpsucker
LD: Longnose dace	BM: Brassy minnow	WM: Western silvery plains minnow	FC: Flathead chub	SM: Smallmouth buffalo
LC: Lake chub	ES: Emerald shiner	CH: Creek chub	FM: Flathead minnow	PS: Pallis Sturgeon
LS: Longnose sucker	WCK: White sucker	BC: Blue sucker	BB: Bismouth buffalo	
SR: Shorthead redhorse	MS: Mountain sucker	SC: Stonecat	BS: Brook stickleback	
S: Sauger	W: Walleye	ID: Iowa darter	MW: Mountain whitefish	
MC: Mottled sculpin	NR: Northern redbelly dace	NX: Northern redbelly dace x fine scale dace		

The following is a MDFWP classification of relative abundance of fish species in individual stream:

- (A) = Abundant
- (C) = Common
- (U) = Uncommon
- (R) = Rare
- (P) = Present

⁶ Flow classification refers to the following: E = Ephemeral E/I = Ephemeral/Intermittent I = Intermittent P = Perennial

Express has completed their Nationwide 404 Permit Application for the Express Pipeline project and submitted the applications to the U.S. Army Corps of Engineers Helena, Montana and Cheyenne, Wyoming State offices. Westech, Helena, Montana, resurveyed the entire route for wetlands. The following Table 16 is the updated summary of wetlands along the proposed Express route. The non-wetland riparian vegetation is listed in a separate Table 16a. A complete listing of all wetlands along the route is in the updated Appendix D in this EIS.

Table 16. Summary of Wetland Areas Crossed by Express Pipeline

State	Wetland Type ¹	Wetland WUS ² (linear feet)	Non-Wetland WUS ² (linear feet)	Total Jurisdictional Wetland (acres)
Montana	RWF	749	1603	1.54
	SWF	586	210	1.21
	SWF and WM	350	80	0.73
	SWF and SWM	159	0	0.33
	DWF/B	631	226	1.31
	DWF/B and SWM	1995	11	4.1
	DWF/B and WM	3204	66	6.61
	WM	1455	0	2.99
	SWM	5506	0	11.37
	NP	700	0	1.44
	IP	14	200	0.03
	CWF	726	10	1.5
	CWF and WM	240	8	0.5
	DWF/B and WM and SWM	310	12	0.64
	RWF and MA	375	0	0.77
	TOTAL	17000 (35.1 ac)	2426 (5.0 ac)	35.07

State	Wetland Type ¹	Wetland WUS ² (linear feet)	Non-Wetland WUS ² (linear feet)	Total Jurisdictional Wetland (acres)
Wyoming	RWF	630	228	1.301
	SWF	150	0	0.269
	SWF and WM	203	85	0.516
	DWF/B	200	94	0.378
	DWF/B and WM	155	0	0.301
	WM	5298	0	10.907
	MA	1419	30	2.932
	IP	550	0	0.399
	CWF and DWF/B	8	0	0.017
	CWF and SS	108	0	0.243
	CWF and SWF	280	0	0.579
	SS	315	2	0.651
	TOTAL	9316 (19.2 ac)	439 (0.9 ac)	18.493

¹Wetland Community Type Codes:

RWF =	River with Wetland Fringe
SWF =	Stream with Wetland Fringe
DWF/B =	Linear Drainage/Swale/Coulee with Wetland Fringe and/or Bottom
WM =	Wet Meadow
SWM =	Saline Wet Meadow
MA =	Marsh
NP =	Natural Pond/Pothole with Wetland Fringe
IP =	Impounded Pond within Drainage
CWF =	Canal with Wetland Fringe (seepage)

²WUS = Waters of the U.S. defined as open waters, mud flats, riffle and pool complexes, vegetated shallows, and other aquatic habitat.

Source: Express Nationwide 404 Permit Applications submitted to the U.S. Army Corps of Engineers Helena MT and Cheyenne WY offices.

Table 16a

Summary of Riparian Areas Crossed by the Express Pipeline Route

State	Wetland Type	Non-Wetland Riparian (linear feet)
Montana	Deciduous Shrub/Wet Meadow Complex	1,754
	Riparian Cottonwood Forest	3,059
	Saline/Sodic Shrubland	470
	Saline/Sodic Wet Meadow	2,285
	Total	7,568
Wyoming	Deciduous Shrub/Wet Meadow Complex	787
	Grassland	80
	Riparian Cottonwood Forest	2,950
	Saline/Sodic Shrubland	6,840
	Saline/Sodic Shrubland/Wet Meadow Complex	3,655
	Saline/Sodic Wet Meadow	5,600
	Unknown	4,265
	Unvegetated Wet Meadow	800 780
	Total	25,757

The corrected Bridger Trail Alternative Alignment (Figure 7) follows on the next page:



CHAPTER 3 — MONTANA DEQ RECOMMENDATIONS

The following is a list of the recommendations of the Montana DEQ for the proposed Express pipeline:

1. The Board authorizes construction and operation of the Express Pipeline Project and associated facilities based on the following:

- a. the initial capacity of the pipeline be approved up to 172,000 barrels per day, and;
- b. include authorization for three electrically driven pump stations and electrical service referred to in the EIS as Eagle Buttes (Station # 5), Straw (Station #6), and Edgar (Station # 7) located within Montana, and;
- c. Any subsequent expansions of capacity through the addition of pumps and pumping stations or to provide on-load or off-load capacity would require review by the DEQ and approval as necessary by the BER under the provisions for certificate amendment found in Section 75-20-219 MCA.

2. The Board approves the Proposed Action with Modifications. The Modifications should include:

- a. Routing in Montana shall include the proposed action with the following realignments as described on pages 2-48 through 2-49 in the DEIS: Lonesome Lake, Arrow Creek Breaks, Hauck Coulee, Historic Well site, North Fork Valley Creek and the addition of the realignment described on page 2-51 as the South-Central Montana Alternative and those minor realignments identified during the stream crossing inspections (see Appendix O). The route width shall be 500 feet.

- b. If the agencies decide the Yellowstone River should be directionally drilled, then the route shall be centered on the line indicated in Figure O-7 of Appendix O.

- c. Where the pipeline crosses the landslide in the Arrow Creek badlands, DEQ recommends that Express must conduct detailed geological/geotechnical studies during the design phase of the project. If the slide is potentially active, Express would be required to implement appropriate designs which might include slope stabilization and drainage, deep burial below the slide plane, heavy-walled pipe, and vigilant monitoring.

- d. In the event that any construction activities extend beyond November 15, consultation with DEQ is required to consider the need for timing restrictions in white-tail deer winter range if seasonal wildlife needs so require. Other wildlife and sensitive plant protection measures are discussed in the draft EIS as part of the Proposed Action and would be incorporated as part of the Board's approval.

e. Timing for crossing of streams in Montana would be restricted to the period of low flow during the summer and fall of the year of construction. This period is generally from August 1 through November 15 except as indicated in the discussion under the new Appendix O. Depending on yearly stream flow conditions, this period may be extended later but would require consultation and approval from DEQ for stream disturbing activities to occur outside of the established window.

f. Stream crossing methods would be based on the results of on-site inspections as documented in the discussion in the new Appendix O. The recommended methods include consideration of stream site conditions, fisheries values and stream-flow in determining the most appropriate way to construct the pipeline across individual streams. The use of directional drilling methods is recommended for the crossing of the Milk River and Arrow Creek, in addition to the Missouri River as described in the draft EIS. In addition, the Board will require Express to further refine crossing method for the Yellowstone River, the North Fork of Valley Creek, and Rock Creek in consultation with the federal agencies such as the Corps of Engineers and EPA. This joint review would occur during pre-construction activities in the spring of the year of construction. Express would be required to comply with the necessary permit conditions imposed through that review.

g. Proper placement of block and check valves would be necessary to help limit the effect of spills should they occur in a sensitive location. DEQ recommends that the Board require the placement of valves as described in the new Appendix O and the installation of a check valve or other appropriate device on the Arrow Creek Bench above the badlands to limit oil flow in the event of accidental spill.

3. The Board has adopted a set of environmental measures which the Department modifies to address the specific impacts of an individual project. DEQ has developed a draft of the measures for the Express pipeline and is presently working with Express to finalize these for this project. It is recommended that the Board authorize the Department to work with Express during the final design phase of the project for the purpose of incorporating these measures into construction documents. This review would include identification of site-specific measures most appropriate for local conditions at pump stations, storage yards for construction equipment and materials, access roads and trails, and project communication facilities. These environmental measures as modified for this project will be presented to the Board.

4. The DEQ recommends that the Board require a cooperative effort be under taken by the Department, Express Pipeline Company and the Montana Power Company or electric power supplier to finalize the location and necessary measures to reduce impacts of construction of lines providing service for the three electric pump stations in Montana associated with the Express pipeline project. DEQ recommends that these measures be consistent with those adopted by the Board for the Laurel to Bridger transmission line project. A similar cooperative effort should be approved for communication facilities. Arrangements for communication facilities have not been finalized.

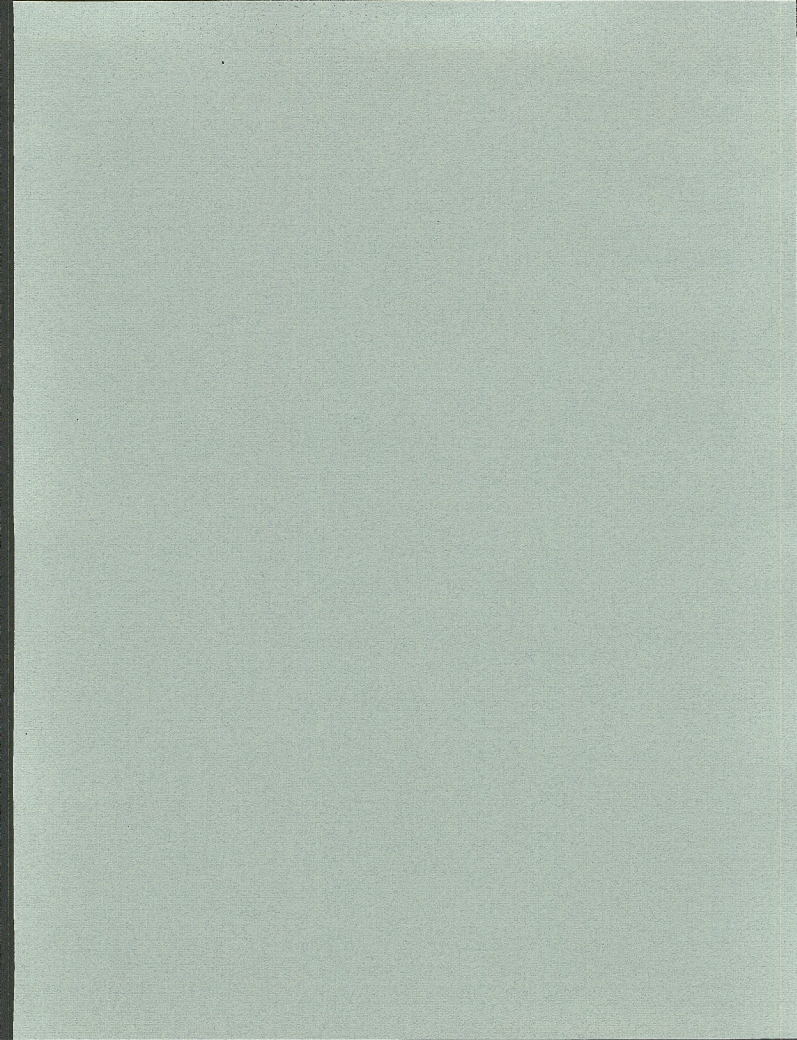
5. The Board shall require Express to obtain a performance bond in the amount of \$1,000 per mile of the route in Montana to be released when the right-of-way is cleaned up, surface soils are recontoured, and gates and fences replaced.

6. The Board shall require Express to obtain a performance bond in the amount of \$1,000 per mile of the route in Montana to be released when right-of-way revegetation and initial weed control are complete.

7. The Board shall require Express to fund a monitoring program in accordance with 75-20-303(b) and including reimbursement for Department expenses in ensuring compliance with the Board's approval.



APPENDIX D
UPDATED WETLANDS IN MONTANA AND WYOMING ALONG THE
EXPRESS PIPELINE RIGHT-OF WAY



APPENDIX D.
WETLAND WATERS OF THE U.S. LOCATIONS, TYPES AND ESTIMATED ACREAGES
WITHIN THE PROPOSED EXPRESS PIPELINE ROW IN MONTANA.

Mile Post	Site Name/Land Use	County	Wetland Type		Wetland wus/ Non-Wetland wus Approx. Crossing Dist. (Ft.)	Approx. Wetland wus Acreage within 90' ROW
			Community Type ¹	Cowardin Classif. ²		
MP 7.04	Unnamed Impoundment - Grain	Hill	WM	PUB/PEM	190/0	0.39
MP 8.23	Milk River - North Bank - Range	Hill	RWF	R2UB	70/85	0.14
MP 14.43	Unnamed Depression - Grain	Hill	NP	PEM/PUB	500/0	1.03
MP 14.90	Ninemile Coulee - Range	Hill	DWF/B	R4SB	15/0	0.03
MP 21.01	Spring Coulee - Range	Hill	DWF/B	R4SB	12/0	0.02
MP 23.72	Dry Lake Coulee - Grain	Hill	DWF/B	R4SB	6/0	0.01
MP 30.22	Unnamed Pond - Grain - Saline	Hill	SWM	PEM/PUB	300/0	0.62
MP 32.84	Sage Creek - Range	Hill	DWF/B	R4SB	16/0	0.03
MP 65.09	Coal Banks Coulee - Range	Chouteau	DWF/B	R4SB	15/20	0.03
MP 68.27	Missouri River - West Bank - Pasture	Chouteau	RWF	R2UB	6/350	0.01
MP 68.41	Missouri River - East Bank - Pasture	Chouteau	RWF	R2UB	12/350	0.02
MP 71.11	Arm of Jackson Coulee - Range	Chouteau	DWF/B	R4SB	13/0	0.03
MP 82.70	Crow Coulee - Saline Wet Meadow - Range	Chouteau	SWM	PUB	20/0	0.04
MP 83.43	Saline Wet Meadow - Pothole - Range	Chouteau	NP	PUB/PEM	200/0	0.41
MP 87.85	Unnamed Drainage - Grain - Saline	Chouteau	SWM	PEM	366/0	0.76
MP 95.69	Flat Creek - Saline - Range	Chouteau	DWF/B & SWM	R4SB/PEM	85/0	0.18
MP 97.53	Phantom Coulee - Range	Chouteau	DWF/B	R4SB	12/0	0.02
MP 99.71	Saline Wetland in Flat Creek - Range	Chouteau	SWM	PEM	4600/0	9.50
MP 101.20	Unnamed Drainage - Grain - Saline	Chouteau	DWF/B	R4SB	3/0	0.01
MP 108.31	Unnamed Drainage - Grain	Chouteau	DWF/B	R4SB	20/0	0.04
MP 111.11	Arrow Creek - Range	Chouteau	SWF	R2UB	172/40	0.36

Wetland Waters of the U.S. in Montana (Continued)

Mile Post	Site Name/Land Use	County	Wetland Type		Wetland wus/ Non-Wetland wus Approx. Crossing Dist. (Ft.)	Approx. Wetland wus Acreage within 90' ROW
			Community Type ¹	Cowardin Classif. ²		
MP 111.83	Hillside Seep - Range	Fergus	SWM	PEM	170/0	0.35
MP 112.17*	Unnamed Tributary to Arrow Creek - Range	Fergus	DWF/B	R4SB	4/8	0.01
MP 116.65	Unnamed Tributary to Coffee Creek - Range	Fergus	DWF/B & WM	R4SB/PEM	59/6	0.02
MP 117.45	Spring just North of Coffee Creek - Range	Fergus	DWF/B	R4SB	15/0	0.03
MP 117.46	Coffee Creek - Range	Fergus	DWF/B	R4SB	8/4	0.02
MP 122.40	Wolf Creek - Range	Fergus	DWF/B	R4SB	3/15	0.01
MP 123.08	Coyote Creek - Range	Fergus	SWF/WM	R2UB/PEM	230/20	0.15
MP 123.56	Unnamed Tributary to Coyote Creek - Range	Fergus	DWF/B & WM	R4SB/PEM	40/0	0.08
MP 124.91	Pacer Coulee - Range	Fergus	SWF	R2UB	38/3	0.08
MP 126.92	Unnamed Drainage - Range	Fergus	DWF/B & WM	R4SB/PEM	40/0	0.00
MP 128.44	Unnamed Drainage - Range	Judith Basin	DWF/B	R4SB	0/0	0.01
MP 129.38	Dry Wolf Creek - Range	Judith Basin	DWF/B	R4SB	2/148	0.00
MP 129.65	Unnamed Drainage - Range	Judith Basin	DWF/B	R4SB	12/0	0.02
MP 131.27	Unnamed Drainage - Range - Saline	Judith Basin	DWF/B & SWM	R4SB/PEM	74/1	0.15
MP 132.30	Sage Creek - Range	Judith Basin	SWF	R2UB	7/13	0.01
MP 133.90	Unnamed Drainage and Spring - Range	Judith Basin	DWF/B	R4SB	12/0	0.02
MP 133.90	Unnamed Spring/Seep - Range	Judith Basin	DWF/B	R4SB	8/0	0.02
MP 134.23	Hillside Spring/Seep - Grain	Judith Basin	WM	PEM	200/0	0.41
MP 134.70	Squaw Creek - Range	Judith Basin	SWF	R2UB	14/3	0.03
MP 135.78	Indian Creek - Range	Judith Basin	DWF/B & WM	R4SB/PEM	80/0	0.17
MP 137.13	Unnamed Drainage - Range	Judith Basin	DWF/B & WM	R4SB/PEM	98/0	0.20
MP 138.75	Louse Creek - Range - Grain	Judith Basin	SWF	R2UB	22/10	0.05
MP 141.23	Unnamed Drainage - Range	Judith Basin	DWF/B & WM	R4SB/PEM	55/0	0.11

Wetland Waters of the U.S. in Montana (Continued)

Mile Post	Site Name/Land Use	County	Wetland Type		Wetland wus/ Non-Wetland wus Approx. Crossing Dist. (Ft.)	Approx. Wetland wus Acreage within 90' ROW
			Community Type ¹	Cowardin Classif. ²		
MP 142.72	Unnamed Drainage - Grain	Judith Basin	SWF/WM	R2UB/PEM	30/0	0.06
MP 143.67	Wet Meadow - Pasture	Judith Basin	WM	PEM	470/0	0.97
MP 143.79	Unnamed Drainage - Range	Judith Basin	DWF/B & WM	R4SB/PEM	20/0	0.06
MP 143.95	Seep/Drainage - Range	Judith Basin	WM	PEM	350/0	0.72
MP 144.06*	Hillside Seep - Range	Judith Basin	WM	PEM	75/0	0.09
MP 144.12	Judith River - South Bank - Range	Judith Basin	RWF	R2UB	42/40	0.09
MP 146.34	Seep Below Irrigation Ditch - Hay	Judith Basin	CWF	PEM	75/0	0.45
MP 146.80	Unnamed Drainage- Range	Judith Basin	DWF/B	R4SB	20/0	0.09
MP 147.16	Unnamed Pond - Reservoir - Saline	Judith Basin	IP	PEM	14/200	0.03
MP 147.85	Hauck Coulee - Range	Judith Basin	SWF	R2UB	6/4	0.01
MP 153.10	Big Coulee Creek - Range	Judith Basin	SWF	R2UB	35/7	0.07
MP 153.72	Ross Fork Creek - Range	Judith Basin	SWF	R2UB	10/22	0.02
MP 155.90	East Buffalo Creek - Range	Fergus	SWF	R2UB	20/9	0.09
MP 156.48	Unnamed Drainage - Grain	Fergus	DWF/B & WM	R4SB/PEM	240/0	0.50
MP 156.59	Unnamed Drainage - Grain	Fergus	DWF/B & WM	R4SB/PEM	220/0	0.45
MP 157.75	Ross Fork Creek - Range	Fergus	SWF	R2UB	15/0	0.03
MP 161.32	Unnamed Drainage - Range	Judith Basin	SWF	R2UB	8/0	0.02
MP 161.71	Unnamed Drainage - Range	Judith Basin	DWF/B	R4SB	15/0	0.09
MP 162.77	Meadow Creek - Range	Fergus	SWF	R2UB	30/0	0.06
MP 162.80	Meadow Adjacent to Meadow Creek	Fergus	DWF/B & WM	R4SB/PEM	20/0	0.04
MP 163.64	Ross Fork Creek - Range	Judith Basin	SWF	R2UB	10/13	0.02
MP 164.39	Ross Fork Creek abandoned meander bend - Pasture	Judith Basin	WM	PEM	200/0	0.41

Wetland Waters of the U.S. in Montana (Continued)

Mile Post	Site Name/Land Use	County	Wetland Type		Wetland wus/ Non-Wetland wus Approx. Crossing Dist. (Ft.)	Approx. Wetland wus Acreage within 90' ROW
			Community Type ¹	Cowardin Classif. ²		
MP 164.50	Ross Fork Creek - Range	Judith Basin	SWF/WM	R2UB/PEM	90/60	0.19
MP 164.95	Unnamed Tributary to Ross Fork - Range	Fergus	SWF	R2UB	8/4	0.02
MP 165.69	Unnamed Tributary to Ross Fork - Range	Fergus	DWF/B	R4SB	32/4	0.02
MP 170.65	East Fork Roberts Creek - Range - Saline	Wheatland	SWF/SWM	R2UB/PEM	159/0	0.33
MP 172.25	Saline Seep - Range	Wheatland	SWM	PEM	50/0	0.10
MP 174.85	Unnamed Drainage - Range	Wheatland	DWF/B	R4SB	25/0	0.05
MP 174.92	Unnamed Drainage - Range	Wheatland	DWF/B	R4SB	15/0	0.03
MP 178.37	Unnamed Drainage - Range - Saline	Wheatland	DWF/B & SWM	R4SB/PEM	162/0	0.03
MP 179.29	Roberts Creek and Pond - Range - Saline	Wheatland	DWF/B & WM	R4SB/PEM	37/60	0.03
MP 182.56	Alkali Creek - Range - Saline	Wheatland	DWF/B & SWM	R4SB/PEM	117/0	0.24
MP 187.64	Unnamed Drainage - Range	Wheatland	DWF/B	R4SB	9/0	0.01
MP 188.88	Unnamed Drainage - Range	Wheatland	DWF/B	R4SB	5/0	0.01
MP 190.61	Unnamed Drainage - Range - Saline	Wheatland	DWF/B	R4SB	9/0	0.02
MP 191.30	Unnamed Drainage and Wet Meadow - Range - Saline	Wheatland	DWF/B & WM	R4SB/PEM	365/0	0.75
MP 192.83	Unnamed Drainage - Range	Wheatland	DWF/B	R4SB	18/0	0.03
MP 193.84	Highway 12 Ditch (North side) - Pasture - Hay	Wheatland	CWF	PEM	56/0	0.12
MP 194.09	Musselshell River - Range	Wheatland	RWF	R3RB	142/60	0.29
MP 194.65	Ditch - Pasture	Wheatland	CWF/WM	PEM	240/8	0.50
MP 195.66	Unnamed Drainage - Range - Saline	Wheatland	DWF/B & SWM	R4SB/PEM	105/0	0.22
MP 196.28	Unnamed Drainage - Range - Saline	Wheatland	DWF/B	R4SB	10/0	0.02
MP 197.54	Mud Creek - Range - Saline	Wheatland	DWF/B & SWM	R4SB/PEM	325/10	0.67
MP 202.60	Fish Creek - Range	Wheatland	SWF	R2UB	11/14	0.02

Wetland Waters of the U.S. in Montana (Continued)

Mile Post	Site Name/Land Use	County	Wetland Type		Wetland wus/ Non-Wetland wus Approx. Crossing Dist. (Ft.)	Approx. Wetland wus Acreage within 90' ROW
			Community Type ¹	Cowardin Classif. ²		
MP 206.59	Unnamed Drainage - Range	Golden Valley	DWF/B	R4SB	8/0	0.02
MP 211.27	Unnamed Tributary to Van Winkle Creek - Range	Golden Valley	DWF/B	R4SB	4/0	0.01
MP 211.52	Van Winkle Creek - Range	Golden Valley	DWF/B & WM	R4SB/PEM	132/0	0.27
MP 212.57	North Fork Big Coulee Creek - Range	Golden Valley	DWF/B	R4SB	4/0	0.01
MP 211.27	South Fork Big Coulee Creek - Range	Stillwater	DWF/B & WM	R4SB/PEM	120/0	0.06
MP 214.80	Tributary to South Fork Big Coulee Creek - Range - Saline	Stillwater	DWF/B	R4SB	21/0	0.04
MP 215.84	Unnamed Drainage - Range	Stillwater	DWF/B	R4SB	6/3	0.04
MP 216.47	Tributary to South Fork Big Coulee Creek - Range	Stillwater	DWF/B	R4SB	15/0	0.03
MP 216.98	Unnamed Drainage - Range	Stillwater	DWF/B	R4SB	19/0	0.04
MP 217.13	Unnamed Drainage - Range - Saline	Stillwater	DWF/B	R4SB	17/3	0.04
MP 219.34	Unnamed Drainage - Range - Saline	Stillwater	DWF/B, WM, SWM	R4SB/PEM	310/12	0.64
MP 219.65	Unnamed Drainage - Range	Stillwater	DWF/B	R4SB	4/0	0.01
MP 220.04	Sixshooter Creek - Range	Stillwater	DWF/B	R4SB	27/0	0.06
MP 223.76	Middle Creek - Range	Stillwater	DWF/B	R4SB	21/2	0.04
MP 225.52	Cedar Creek - Pasture	Stillwater	DWF/B	R4SB	10/0	0.02
MP 227.56	Gurney Creek - Pasture - Hay - Saline	Stillwater	DWF/B & SWM	R4SB/PEM	1000/0	2.07
MP 229.46	Unnamed Drainage - Range - Saline	Stillwater	DWF/B	R4SB	18/0	0.04
MP 229.93	Unnamed Drainage - Range - Saline	Stillwater	DWF/B	R4SB	3/0	0.01
MP 230.43	Unnamed Drainage - Range - Saline	Stillwater	DWF/B	R4SB	18/0	0.04
MP 233.22	Struck Creek - Range	Stillwater	DWF/B & WM	R4SB/PEM	128/0	0.26
MP 233.30	Struck Creek - Range - Saline	Stillwater	DWF/B & SWM	R4SB/PEM	117/0	0.24

Wetland Waters of the U.S. in Montana (Continued)

Mile Post	Site Name/Land Use	County	Wetland Type		Wetland wus/ Non-Wetland wus Approx. Crossing Dist. (Ft.)	Approx. Wetland wus Acreage within 90' ROW
			Community Type ¹	Cowardin Classif. ²		
MP 233.90	Toll Creek - Range - Grain	Stillwater	DWF/B & WM	R4SB/PEM	66/0	0.14
MP 234.49	Greenwood Creek - Range - Saline	Stillwater	DWF/B	R4SB	6/2	0.01
MP 236.12	Unnamed Drainage - Range - Grain	Stillwater	DWF/B	R4SB	4/0	0.01
MP 236.25	Unnamed Drainage - Range - Grain	Stillwater	DWF/B & WM	R4SB/PEM	40/0	0.08
MP 238.71	Unnamed Drainage - Range	Stillwater	DWF/B	R4SB	4/0	0.01
MP 238.71	Unnamed Drainage - Range	Stillwater	DWF/B	R4SB	4/0	0.01
MP 241.60	Unnamed Drainage - Grain	Stillwater	DWF/B & WM	R4SB/PEM	60/0	0.12
MP 243.78	North Fork Valley Creek - Range	Stillwater	SWF	R2UB	3/2	0.01
MP 246.43	North Fork Valley Creek - Range - Saline	Stillwater	SWF	R2UB	5/3	0.01
MP 247.32	Valley Creek - Range	Stillwater	SWF	R2UB	5/25	0.01
MP 247.48	Valley Creek - Range	Stillwater	SWF	R2UB	16/0	0.03
MP 248.15	Unnamed Tributary to Valley Creek - Range	Stillwater	SWF	R2UB	3/12	0.01
MP 251.33	Valley Creek - Range - Grain - Saline	Stillwater	SWF	R2UB	60/7	0.12
MP 251.78	Valley Creek - Range	Stillwater	SWF	R2UB	3/15	0.01
MP 254.77*	Seep from Ditch - Pasture	Stillwater	CWF	PEM	400/0	0.83
MP 254.94	Seep from Old Mill Ditch - Pasture	Stillwater	CWF	PEM	195/10	0.40
MP 255.44	North Bank Yellowstone River - Pasture	Stillwater	RWF	R3RB	100/200	0.21
MP 255.66	South Bank Yellowstone River - Range	Carbon	RWF	R3RB	100/200	0.21
MP 255.68	Bellion Creek - Range	Carbon	DWF/B	R4SB	8/0	0.02
MP 257.22	Unnamed Drainage - Grain	Carbon	DWF/B	R4SB	8/0	0.02
MP 260.13	Farewell Creek - Range	Carbon	SWF	R2UB	15/0	0.03
MP 263.24	Rock Creek - North Bank - Range	Carbon	RWF	R3RB	265/180	0.55

Wetland Waters of the U.S. in Montana (Continued)

Mile Post	Site Name/Land Use	County	Wetland Type		Wetland wus/ Non-Wetland wus Approx. Crossing Dist. (Ft.)	Approx. Wetland wus Acreage within 90' ROW
			Community Type ¹	Cowardin Classif. ²		
MP 263.27	South Bank Rock Creek and adjacent wetland - Range	Carbon	RWF/MA	R3RB/PEM	375/0	0.77
MP 264.73 *	Unnamed Drainage - Crop	Carbon	DWF/B	R4SB	15/2	0.03
MP 266.33	Clarks Fork River - Range - Crop	Carbon	RWF	R3RB	12/138	0.02
MP 266.43	Clarks Fork Meander Channel - Range	Carbon	DWF/B	R4SB	18/2	0.04
MP 270.12	Unnamed Drainage - Range	Carbon	DWF/B	R4SB	4/0	0.01
MP 270.13	Unnamed Drainage - Range - Grain - Saline	Carbon	DWF/B	R4SB	8/1	0.02
MP 272.72	Unnamed Drainage - Range - Saline	Carbon	DWF/B	R4SB	2/0	0.00
MP 287.44	Sage Creek Diversion Ditch - Range	Carbon	DWF/B	R4SB	12/0	0.02
MP 295.23	King Creek - Hay	Carbon	DWF/B & WM	R4SB/PEM	1320/0	2.73
MP 296.39	Piney Creek - Range	Carbon	SWF	R2UB	70/4	0.14
MONTANA TOTAL					16990/2426	35.10

**WATERS OF THE U.S. LOCATIONS, TYPES AND ESTIMATED ACREAGES
WITHIN THE PROPOSED EXPRESS PIPELINE ROW IN WYOMING.**

Mile Post	Site Name/Land Use	County	Wetland Type		Wetland wus/ Nonwetland wus Approx. Crossing Dist. (Ft.)	Approx. Wetland wus Acreage within 90' ROW
			Community Type ¹	Cowardin Classif. ²		
MP 305.17	Unnamed Drainage - Range	Big Horn			0/2	0.000
MP 305.68	Unnamed Drainage - Range	Big Horn			0/2	0.000
MP 305.85	Unnamed Drainage - Range	Big Horn			0/2	0.000
MP 305.68	Unnamed Drainage - Range	Big Horn			0/5	0.000
MP 308.46	Unnamed Drainage - Range	Big Horn			0/3	0.000
MP 309.07	Unnamed Drainage - Range	Big Horn			0/2	0.000
MP 309.43	Unnamed Drainage - Range	Big Horn			0/2	0.000
MP 309.63	Unnamed Drainage - Range	Big Horn			0/2	0.000
MP 310.64	Unnamed Drainage - Range	Big Horn			0/2	0.000
MP 311.01	Unnamed Drainage - Range	Big Horn			0/1	0.000
MP 311.06	Unnamed Drainage - Range	Big Horn			0/1	0.000
MP 311.29	Unnamed Drainage - Range	Big Horn			0/1	0.000
MP 311.55	Unnamed Drainage - Range	Big Horn			0/1	0.000
MP 311.60	Unnamed Drainage - Range	Big Horn			0/1	0.000
MP 312.42	Unnamed Drainage - Range	Big Horn			0/1	0.000
MP 312.80	Unnamed Drainage - Range	Big Horn			0/1	0.000
MP 312.87	Unnamed Drainage - Range	Big Horn			0/1	0.000
MP 313.01	Unnamed Drainage - Range	Big Horn			0/2	0.000
MP 313.43	Unnamed Drainage - Range	Big Horn			0/1	0.000
MP 314.57	Unnamed Drainage - Range	Big Horn			0/1	0.000
MP 314.61	Unnamed Drainage - Range	Big Horn			0/1	0.000

Wetland Waters of the U.S. in Wyoming (Continued)

Mile Post	Site Name/Land Use	County	Wetland Type		Wetland wus/ Nonwetland wus Approx. Crossing Dist. (Ft.)	Approx. Wetland wus Acreage within 90' ROW
			Community Type ¹	Cowardin Classif. ²		
MP 315.55	Unnamed Drainage - Range	Big Horn			5/0	0.000
MP 317.99	Channel Leakage from Sidon Canal - Range	Big Horn	CWF(DWF/B)	R4SB	8/0	0.017
MP 317.12	Unnamed Drainage - Range	Big Horn			0/2	0.000
MP 317.99	Drainage below Dam - Range - Saline	Big Horn	DWF/B	R4SB	15/0	0.031
MP 317.79	Unnamed Drainage - Range	Big Horn			0/1	0.000
MP 317.99	Peterson Creek - Range	Big Horn	SWF	R2UB	5/9	0.006
MP 318.70	Unnamed Drainage - Range	Big Horn	DWF/B	R4SB	6/0	0.012
MP 318.93	Seep North of Sage Creek - Range - Saline	Big Horn	WM	PEM	75/0	0.155
MP 319.32	Sage Creek - Range	Big Horn	SWF	R2UB	7/0	0.014
MP 319.45	Shoshone River North Bank - Range	Big Horn			0/25	0.000
MP 319.47	Shoshone River South Bank - Range	Big Horn	RWF	R3RB	76/25	0.157
MP 319.64	Marsh South of Shoshone River - Range	Big Horn	MA	PEM	140/0	0.289
MP 323.15	Wetland Complex - Range - Saline	Big Horn	WM	PEM	4963/0	10.254
MP 325.50	Little Dry Creek - Range	Big Horn			0/10	0.000
MP 326.65	Unnamed Drainage - Range	Big Horn			5/0	0.000
MP 327.74	Unnamed Drainage - Range	Big Horn			0/10	0.000
MP 327.95	Unnamed Drainage - Range	Big Horn			/	0.000
MP 328.51	Unnamed Drainage - Range	Big Horn			0/6	0.000
MP 329.33	Unnamed Drainage - Range	Big Horn			/	0.000
MP 329.57	Unnamed Drainage - Range	Big Horn			/	0.000
MP 329.93	Unnamed Drainage - Range	Big Horn			/	0.000

Wetland Waters of the U.S. in Wyoming (Continued)

Mile Post	Site Name/Land Use	County	Wetland Type		Wetland wus/ Nonwetland wus Approx. Crossing Dist. (Ft.)	Approx. Wetland wus Acreage within 90' ROW
			Community Type ¹	Cowardin Classif. ²		
MP 330.27	Sand Draw - Range	Big Horn			0/25	0.000
MP 331.11	Unnamed Drainage - Range	Big Horn			/	0.000
MP 331.29	Unnamed Drainage - Range	Big Horn			/	0.000
MP 331.35	Unnamed Drainage - Range	Big Horn			/	0.000
MP 331.97	Unnamed Drainage - Range	Big Horn			0/10	0.000
MP 332.22	Unnamed Drainage - Range	Big Horn			/	0.000
MP 333.57	Unnamed Drainage - Range	Big Horn			0/7	0.000
MP 333.66	Unnamed Drainage - Range	Big Horn			0/5	0.000
MP 334.69	Unnamed Drainage - Range	Big Horn			/	0.000
MP 335.12	Unnamed Drainage - Range	Big Horn			/	0.000
MP 335.41	Unnamed Drainage - Range	Big Horn			/	0.000
MP 335.89	Unnamed Drainage - Range	Big Horn			/	0.000
MP 338.71	Unnamed Drainage - Range	Big Horn			/	0.000
MP 341.11	Unnamed Drainage - Range	Big Horn			/	0.000
MP 342.30	Unnamed Drainage - Range	Big Horn			/	0.000
MP 342.95	Unnamed Drainage - Range	Big Horn			/	0.000
MP 343.52	Unnamed Drainage - Range	Big Horn			/	0.000
MP 343.77	Unnamed Drainage - Range	Big Horn			0/5	0.000
MP 343.91	Unnamed Drainage - Range	Big Horn			0/3	0.000
MP 344.26	Unnamed Drainage - Range	Big Horn			0/2	0.000
MP 344.57	Little Dry Creek - Range	Big Horn			0/8	0.000

Wetland Waters of the U.S. in Wyoming (Continued)

Mile Post	Site Name/Land Use	County	Wetland Type		Wetland wus/ Nonwetland wus Approx. Crossing Dist. (Ft.)	Approx. Wetland wus Acreage within 90' ROW
			Community Type ¹	Cowardin Classif. ²		
MP 344.76	Unnamed Drainage - Range	Big Horn			/	0.000
MP 344.76	Unnamed Drainage - Range	Big Horn			/	0.000
MP 344.97	Unnamed Drainage - Range	Big Horn			/	0.000
MP 345.02	Unnamed Drainage - Range	Big Horn			/	0.000
MP 345.07	Unnamed Drainage - Range	Big Horn			/	0.000
MP 346.08	Unnamed Drainage - Range	Big Horn			/	0.000
MP 347.54	Footslope Seep - Range - Saline	Big Horn	SS	PEM	275/0	0.000
MP 347.66	Dry Creek - Range	Big Horn	SWF	R2UB	18/20	0.037
MP 348.50	Unnamed Drainage - Range	Big Horn			/	0.000
MP 348.95	Unnamed Drainage - Range	Big Horn			0/5	0.000
MP 350.67	Unnamed Drainage - Range	Big Horn			/	0.000
MP 351.39	Unnamed Drainage - Range	Big Horn			/	0.000
MP 351.88	Unnamed Drainage - Range	Big Horn			/	0.000
MP 352.25	Greybull River - Range	Big Horn	RWF	R2UB	548/52	1.132
MP 354.61	Unnamed Drainage - Range	Big Horn			/	0.000
MP 355.28	Unnamed Drainage - Range	Big Horn			/	0.000
MP 355.33	Unnamed Drainage - Range	Big Horn			/	0.000
MP 355.39	Unnamed Drainage - Range	Big Horn			/	0.000
MP 355.93	Unnamed Drainage - Range	Big Horn			/	0.000
MP 356.62	Unnamed Drainage - Range	Big Horn			/	0.000
MP 356.83	Unnamed Drainage - Range	Big Horn			/	0.000

Wetland Waters of the U.S. in Wyoming (Continued)

Mile Post	Site Name/Land Use	County	Wetland Type		Wetland wus/ Nonwetland wus Approx. Crossing Dist. (Ft.)	Approx. Wetland wus Acreage within 90' ROW
			Community Type ¹	Cowardin Classif. ²		
MP 356.85	Unnamed Drainage - Range	Big Horn			/	0.000
MP 357.30	Unnamed Drainage - Range	Big Horn			/	0.000
MP 357.63	Unnamed Drainage - Range	Big Horn			/	0.000
MP 357.36	Unnamed Drainage - Range	Big Horn			/	0.000
MP 358.40	Antelope Creek - Range	Big Horn			0/17	0.000
MP 359.35	Unnamed Drainage - Range	Big Horn			/	0.000
MP 360.85	Unnamed Drainage - Range	Big Horn			/	0.000
MP 360.73	Unnamed Drainage - Range	Big Horn			/	0.000
MP 361.37	Unnamed Drainage - Range	Big Horn			/	0.000
MP 361.61	Unnamed Drainage - Range	Big Horn			/	0.000
MP 361.75	Unnamed Drainage - Range	Big Horn			/	0.000
MP 361.91	Unnamed Drainage - Range	Big Horn			/	0.000
MP 361.96	Elk Creek - Range	Big Horn			0/18	0.000
MP 362.56	Unnamed Drainage - Range	Big Horn			/	0.000
MP 362.67	Unnamed Drainage - Range	Big Horn			/	0.000
MP 364.10	Unnamed Drainage - Range	Big Horn			/	0.000
ME 364.26	Unnamed Drainage - Range	Big Horn			/	0.000
MP 364.77	Unnamed Drainage - Range	Big Horn			/	0.000
MP 364.80	Unnamed Drainage - Range	Big Horn			/	0.000
MP 365.10	Dobie Creek - Range	Big Horn			0/4	0.000
MP 365.27	Unnamed Drainage - Range	Big Horn			/	0.000

Wetland Waters of the U.S. in Wyoming (Continued)

Mile Post	Site Name/Land Use	County	Wetland Type		Wetland wus/ Nonwetland wus Approx. Crossing Dist. (Ft.)	Approx. Wetland wus Acreage within 90' ROW
			Community Type ¹	Cowardin Classif. ²		
MP 365.87	Unnamed Drainage - Range	Big Horn			/	0.000
MP 366.13	Unnamed Drainage - Range	Big Horn			/	0.000
MP 366.39	Unnamed Drainage - Range	Big Horn			/	0.000
MP 365.87	Unnamed Drainage - Range	Big Horn			/	0.000
MP 367.35	Alamo Creek - Range	Big Horn			0/4	0.000
MP 367.51	Unnamed Drainage - Range	Big Horn			/	0.000
MP 367.71	Unnamed Drainage - Range	Big Horn			/	0.000
MP 367.73	Unnamed Drainage - Range	Big Horn			/	0.000
MP 367.75	Unnamed Drainage - Range	Big Horn			/	0.000
MP 368.15	Unnamed Drainage - Range	Big Horn			/	0.000
MP 368.20	Unnamed Drainage - Range	Big Horn			/	0.000
MP 368.22	Unnamed Drainage - Range	Big Horn			/	0.000
MP 368.32	Unnamed Drainage - Range	Big Horn			/	0.000
MP 368.59	Unnamed Drainage - Range	Big Horn			0/15	0.000
MP 368.94	Unnamed Drainage - Range	Big Horn			/	0.000
MP 369.53	Unnamed Drainage - Range	Big Horn			/	0.000
MP 371.18	Unnamed Drainage - Range	Big Horn			/	0.000
MP 372.53	Big Horn Canal Seep - Saline	Big Horn	CWF(SS)	PEM	75/0	0.155
MP 372.83	Five Mile Creek - Range	Big Horn	DWF/B	R4SB	10/0	0.021
MP 372.86	Unnamed Seep - Crop	Big Horn	WM	PEM	150/0	0.310
MP 373.78	Six Mile Creek - Range	Washakie	SWF	R2UB	66/0	0.136

Wetland Waters of the U.S. in Wyoming (Continued)

Mile Post	Site Name/Land Use	County	Wetland Type		Wetland wus/ Nonwetland wus Approx. Crossing Dist. (Ft.)	Approx. Wetland wus Acreage within 90' ROW
			Community Type ¹	Cowardin Classif. ²		
MP 374.32	Big Horn River Marsh - Range	Washakie	MA	PEM	393/0	0.812
MP 374.37	Bighorn River West Bank - Range	Washakie	RWF	R3UB	4/125	0.008
MP 374.42	Bighorn River East Bank - Range	Washakie	RWF	R3UB	2/26	0.008
MP 374.58	Fritz Canal Seep - Crop	Washakie	CWF (SS)	PEM	33/0	0.008
MP 380.21	Unnamed Drainage - Range	Washakie			/	0.000
MP 380.27	Unnamed Drainage - Range	Washakie			/	0.000
MP 380.52	Unnamed Drainage - Range	Washakie			/	0.000
MP 380.79	Unnamed Drainage - Range	Washakie			/	0.000
MP 381.44	Unnamed Drainage - Range	Washakie			/	0.000
MP 382.04	Unnamed Drainage - Range	Washakie				0.000
MP 382.07	Unnamed Drainage - Range	Washakie			/	0.000
MP 382.26	Unnamed Drainage - Range	Washakie			/	0.000
MP 382.29	Unnamed Drainage - Range	Washakie			/	0.000
MP 382.34	Unnamed Drainage - Range	Washakie			/	0.000
MP 382.44	Unnamed Drainage - Range	Washakie			/	0.000
MP 382.47	Unnamed Drainage - Range	Washakie			/	0.000
MP 382.60	Unnamed Drainage - Range	Washakie			0/96	0.000
MP 382.64	Unnamed Drainage - Range	Washakie			/	0.000
MP 383.44	Unnamed Drainage - Range	Washakie			/	0.000
MP 383.50	Unnamed Drainage - Range	Washakie			/	0.000
MP 385.88*	Slick Creek - Crop - Range	Washakie	DWF/B	R4SB	3/25	0.006

Wetland Waters of the U.S. in Wyoming (Continued)

Mile Post	Site Name/Land Use	County	Wetland Type		Wetland wus/ Nonwetland wus Approx. Crossing Dist. (Ft.)	Approx. Wetland wus Acreage within 90' ROW
			Community Type ¹	Cowardin Classif. ²		
MP 386.30	Unnamed Drainage - Range	Washakie			/	0.000
MP 386.52	Unnamed Drainage - Range	Washakie			/	0.000
MP 387.30	Unnamed Drainage - Range	Washakie			/	0.000
MP 387.36	Unnamed Drainage - Range	Washakie			0/9	0.000
MP 387.82	Little Slick Creek - Range	Washakie			0/2	0.000
MP 390.42	Unnamed Drainage - Range	Washakie			0/1	0.000
MP 390.95	Unnamed Drainage - Range	Washakie			/	0.000
MP 390.95	Unnamed Drainage - Range	Washakie			/	0.000
MP 391.24	Unnamed Drainage - Range	Washakie			/	0.000
MP 391.49	Unnamed Drainage - Range	Washakie			/	0.000
MP 392.02	Unnamed Drainage - Range	Washakie			/	0.000
MP 392.09	East Fork Nowater Creek - Range	Washakie			0/20	0.000
MP 392.61	Unnamed Drainage - Range	Washakie			/	0.000
MP 392.87	Unnamed Drainage - Range	Washakie			/	0.000
MP 392.95	Unnamed Drainage - Range	Washakie			/	0.000
MP 393.06	Unnamed Drainage - Range	Washakie			/	0.000
MP 393.09	Unnamed Drainage - Range	Washakie			/	0.000
MP 393.23	Unnamed Drainage - Range	Washakie			/	0.000
MP 393.54	Unnamed Drainage - Range	Washakie			/	0.000
MP 393.83	Unnamed Drainage - Range	Washakie			/	0.000
MP 393.96	Unnamed Drainage - Range	Washakie			/	0.000

Wetland Waters of the U.S. in Wyoming (Continued)

Mile Post	Site Name/Land Use	County	Wetland Type		Wetland wus/ Nonwetland wus Approx. Crossing Dist. (Ft.)	Approx. Wetland wus Acreage within 90' ROW
			Community Type ¹	Cowardin Classif. ²		
MP 394.27	Unnamed Drainage - Range	Washakie			/	0.000
MP 394.43	Unnamed Drainage - Range	Washakie			/	0.000
MP 395.57	Unnamed Drainage - Range	Washakie			0/3	0.000
MP 395.80	Little Sand Draw - Range	Washakie			/	0.000
MP 396.73	Unnamed Drainage - Range	Washakie			/	0.000
MP 397.00	Unnamed Drainage - Range	Washakie			/	0.000
MP 399.42	Unnamed Drainage - Range	Washakie			0/3	0.000
MP 399.07	Unnamed Drainage - Range	Washakie			0/3	0.000
MP 399.07	Nowater Creek - Range	Washakie	SWF	R2UB	52/8	0.107
MP 399.43	Unnamed Drainage - Range	Washakie			/	0.000
MP 399.62	Unnamed Drainage - Range	Washakie			/	0.000
MP 401.00	Unnamed Drainage - Range	Washakie			/	0.000
MP 401.29	Unnamed Drainage - Range	Washakie			/	0.000
MP 402.23	Unnamed Drainage - Range	Washakie			/	0.000
MP 402.86	Unnamed Drainage - Range	Washakie			/	0.000
MP 402.97	Unnamed Drainage - Range	Washakie			/	0.000
MP 403.15	Unnamed Drainage - Range	Washakie			/	0.000
MP 403.30	Unnamed Drainage - Range	Washakie			/	0.000
MP 403.41	Unnamed Drainage - Range	Washakie			/	0.000
MP 403.45	Unnamed Drainage - Range	Washakie			/	0.000
MP 403.75	Unnamed Drainage - Range	Washakie			/	0.000

Wetland Waters of the U.S. in Wyoming (Continued)

Mile Post	Site Name/Land Use	County	Wetland Type		Wetland wus/ Nonwetland wus Approx. Crossing Dist. (Ft.)	Approx. Wetland wus Acreage within 90' ROW
			Community Type ¹	Cowardin Classif. ²		
MP 403.79	Unnamed Drainage - Range	Washakie			/	0.000
MP 404.09	Unnamed Drainage - Range	Washakie			/	0.000
MP 404.19	Unnamed Drainage - Range	Washakie			/	0.000
MP 404.32	Unnamed Drainage - Range	Washakie			/	0.000
MP 404.46	Unnamed Drainage - Range	Washakie			/	0.000
MP 404.59	Unnamed Drainage - Range	Washakie			/	0.000
MP 404.59	Unnamed Drainage - Range	Washakie			/	0.000
MP 404.72	Unnamed Drainage - Range	Washakie			/	0.000
MP 404.19	Unnamed Drainage - Range	Washakie			/	0.000
MP 404.80	Unnamed Drainage - Range	Washakie			/	0.000
MP 405.17	Unnamed Drainage - Range	Washakie			/	0.000
MP 405.23	Unnamed Drainage - Range	Hot Springs			/	0.000
MP 405.56	Unnamed Drainage - Range	Hot Springs			/	0.000
MP 405.60	Unnamed Drainage - Range	Hot Springs			/	0.000
MP 406.30	Unnamed Drainage - Range	Hot Springs			/	0.000
MP 405.91	Unnamed Drainage - Range	Hot Springs			/	0.000
MP 406.39	Unnamed Drainage - Range - Saline	Hot Springs	DWF/B & WM	R4SB	40/0	0.083
MP 406.70	Unnamed Drainage - Range	Hot Springs			0/8	0.000
MP 406.94	Unnamed Drainage - Range	Hot Springs			0/10	0.000
MP 407.02	Lake Creek - Range	Hot Springs	DWF/B	R4SB	6/0	0.012
MP 407.04	Unnamed Drainage - Range	Hot Springs			/	0.000

Wetland Waters of the U.S. in Wyoming (Continued)

Mile Post	Site Name/Land Use	County	Wetland Type		Wetland wus/ Nonwetland wus Approx. Crossing Dist. (Ft.)	Approx. Wetland wus Acreage within 90' ROW
			Community Type ¹	Cowardin Classif. ²		
MP 407.12	Unnamed Drainage - Range	Hot Springs			0/2	0.000
MP 407.55	Unnamed Drainage - Range	Hot Springs			/	0.000
MP 407.75	Unnamed Drainage - Range	Hot Springs			0/5	0.000
MP 408.74	Kirby Creek - Range	Hot Springs	SWF	R2UB	34/6	0.000
MP 409.91	Unnamed Drainage - Range	Hot Springs			/	0.000
MP 410.73	Unnamed Drainage - Range	Hot Springs			/	0.000
MP 410.75	Unnamed Drainage - Range	Hot Springs			/	0.000
MP 412.37	Unnamed Drainage - Range	Hot Springs			0/20	0.000
MP 415.66	Unnamed Drainage - Range	Hot Springs			/	0.000
MP 415.97	West Kirby Creek - Range	Hot Springs	SWF & WM	R2UB/PEM	130/0	0.269
MP 416.76	Unnamed Drainage - Range	Hot Springs			/	0.000
MP 416.76	Unnamed Drainage - Range	Hot Springs			/	0.000
MP 418.92	Unnamed Drainage - Range	Hot Springs			/	0.000
MP 419.15	Unnamed Drainage - Range	Hot Springs			/	0.000
MP 419.43	Unnamed Drainage - Range	Hot Springs			/	0.000
MP 419.81	Unnamed Drainage - Range	Hot Springs			/	0.000
MP 419.86	Unnamed Drainage - Range	Hot Springs			/	0.000
MP 420.02	Unnamed Drainage - Range	Hot Springs			/	0.000
MP 420.17	Unnamed Drainage - Range	Hot Springs			/	0.000
MP 420.38	Unnamed Drainage - Range	Hot Springs			/	0.000
MP 421.17	Unnamed Drainage - Range	Hot Springs			/	0.000

Wetland Waters of the U.S. in Wyoming (Continued)

Mile Post	Site Name/Land Use	County	Wetland Type		Wetland wus/ Nonwetland wus Approx. Crossing Dist. (Ft.)	Approx. Wetland wus Acreage within 90' ROW
			Community Type ¹	Cowardin Classif. ²		
MP 421.19	Unnamed Drainage - Range	Hot Springs			/	0.000
MP 421.44	Unnamed Drainage - Range	Hot Springs			/	0.000
MP 422.43*	West Bridger Creek - Range	Hot Springs	DWF/B	R4SB	8/25	0.017
MP 422.49	Unnamed Drainage - Range	Hot Springs			/	0.000
MP 422.49	West Bridger Creek Tributary - Range	Hot Springs	DWF/B	R4SB	●/4	0.014
MP 422.88	Unnamed Drainage - Range	Hot Springs			/	0.000
MP 423.37	Unnamed Drainage - Range	Hot Springs			/	0.000
MP 423.62	Unnamed Drainage - Range	Fremont			/	0.000
MP 426.31	South Bridger Creek - Range	Fremont			0/3	0.000
MP 427.02	Unnamed Drainage - Range	Fremont			0/4	0.000
MP 433.55	Bridger Creek Overflow Channels - Range	Fremont	DWF/B	R4SB	●/3	0.017
MP 433.62	Bridger Creek - Range	Fremont	SWF	R2UB	2/10	0.000
MP 434.85	Davis Draw - Range	Fremont			0/4	0.000
MP 435.70	Cottonwood Creek - Range	Fremont			0/3	0.000
MP 436.89	Unnamed Drainage - Range	Fremont			0/30	0.000
MP 435.95	Unnamed Drainage - Range	Fremont			0/2	0.000
MP 436.89	Unnamed Drainage - Range	Fremont			/	0.000
MP 437.06	Unnamed Drainage - Range	Fremont			0/1	0.000
MP 437.27	Unnamed Drainage - Range	Fremont			/	0.000
MP 437.61	Unnamed Drainage - Range	Fremont			0/10	0.000
MP 438.41	Unnamed Drainage - Range	Fremont			0/5	0.000

Wetland Waters of the U.S. in Wyoming (Continued)

Mile Post	Site Name/Land Use	County	Wetland Type		Wetland wus/ Nonwetland wus Approx. Crossing Dist. (Ft.)	Approx. Wetland wus Acreage within 90' ROW
			Community Type ¹	Cowardin Classif. ²		
MP 438.84	Depression Area - Range	Fremont	CWF (SWM)	PEM	280/0	0.579
MP 439.08	Pond - Range	Fremont	MA	PEM	31/30	0.064
MP 439.62	Badwater Creek - Range	Fremont	SWF	R2UB	7/13	0.014
MP 439.93	Unnamed Drainage - Range	Fremont			0/25	0.000
MP 441.12	Unnamed Drainage - Range	Fremont			/	0.000
MP 442.01	Sand Creek - Range	Fremont			0/15	0.000
MP 443.86	Unnamed Drainage - Range	Fremont			0/2	0.000
MP 444.07	Unnamed Drainage - Range	Fremont			0/10	0.000
MP 444.36	Unnamed Drainage - Range	Fremont			0/6	0.000
MP 444.43	Unnamed Drainage - Range	Fremont			0/4	0.000
MP 444.73	Unnamed Drainage - Range	Fremont			0/8	0.000
MP 444.83	Unnamed Drainage - Range	Fremont			0/4	0.000
MP 444.98	Unnamed Drainage - Range	Fremont			0/3	0.000
MP 445.17	Unnamed Drainage - Range	Natrona			0/15	0.000
MP 445.33	Unnamed Drainage - Range	Natrona			0/4	0.000
MP 446.23	South Fork - Range	Natrona			0/15	0.000
MP 446.82	Unnamed Drainage - Range	Natrona			0/5	0.000
MP 447.03	Unnamed Drainage - Range	Natrona			0/2	0.000
MP 447.29	Unnamed Drainage - Range	Natrona			0/7	0.000
MP 447.38	Unnamed Drainage - Range	Natrona			0/2	0.000
MP 447.65	Unnamed Drainage - Range	Natrona			0/1	0.000

Wetland Waters of the U.S. in Wyoming (Continued)

Mile Post	Site Name/Land Use	County	Wetland Type		Wetland wus/ Nonwetland wus Approx. Crossing Dist. (Ft.)	Approx. Wetland wus Acreage within 90' ROW
			Community Type ¹	Cowardin Classif. ²		
MP 447.98	Unnamed Drainage - Range	Natrona			0/8	0.000
MP 448.19	Unnamed Drainage - Range	Natrona			0/12	0.000
MP 448.36	Unnamed Drainage - Range	Natrona			0/15	0.000
MP 448.19	Unnamed Drainage - Range	Natrona			0/1	0.000
MP 448.36	Unnamed Drainage - Range	Natrona			0/15	0.000
MP 449.49	Unnamed Drainage - Range	Natrona			0/4	0.000
MP 449.53	Unnamed Drainage - Range	Natrona			0/8	0.000
MP 449.60	Unnamed Drainage - Range	Natrona			0/1	0.000
MP 449.60	Unnamed Drainage - Range	Natrona			0/8	0.000
MP 449.60	Unnamed Drainage - Range	Natrona			0/8	0.000
MP 450.08	Unnamed Drainage - Range	Natrona			0/8	0.000
MP 450.16	Unnamed Drainage - Range	Natrona			0/8	0.000
MP 450.16	Unnamed Drainage - Range	Natrona			0/8	0.000
MP 450.75	Pond - Range	Natrona			0/100	0.000
MP 450.88	Unnamed Drainage - Range	Natrona			0/10	0.000
MP 451.45	Unnamed Drainage - Range	Natrona			0/8	0.000
MP 451.59	Unnamed Drainage - Range	Natrona			0/12	0.000
MP 451.82	Unnamed Drainage - Range	Natrona			0/18	0.000
MP 452.02	Unnamed Drainage - Range	Natrona			0/6	0.000
MP 452.09	Unnamed Drainage - Range	Natrona			0/12	0.000
MP 452.71	Unnamed Drainage - Range	Natrona			0/2	0.000

Wetland Waters of the U.S. in Wyoming (Continued)

Mile Post	Site Name/Land Use	County	Wetland Type		Wetland wus/ Nonwetland wus Approx. Crossing Dist. (Ft.)	Approx. Wetland wus Acreage within 90' ROW
			Community Type ¹	Cowardin Classif. ²		
MP 452.97	Unnamed Drainage - Range	Natrona			0/3	0.000
MP 453.40	Unnamed Drainage - Range	Natrona			0/40	0.000
MP 453.60	Red Creek Tributary - Saline	Natrona	DWF/B	R4SB	12/0	0.025
MP 453.98	Unnamed Drainage - Range	Natrona			4/0	0.000
MP 454.33	Red Creek - Range	Natrona			4/0	0.000
MP 456.55	Unnamed Drainage - Range	Natrona	IP	PUB	20/0	0.041
MP 456.55	Unnamed Drainage - Range	Natrona	DWF/B	R4SB	4/0	0.009
MP 452.97	Unnamed Drainage - Range	Natrona			4/0	0.000
MP 459.22	Unnamed Drainage - Range	Natrona			4/0	0.000
MP 459.83	Elk Creek - Range - Saline	Natrona			4/0	0.000
MP 460.87	Alkali Creek - Range	Natrona			0/3	0.000
MP 460.92	Unnamed Drainage - Range - Saline	Natrona	DWF/B	R4SB	18/0	0.037
MP 471.37	Keg Spring Draw - Range	Natrona	DWF/B & WM	R4SB/PEM	115/0	0.238
MP 477.48	South Fork Powder River - Range	Natrona	SWF	R2UB	45/7	0.000
MP 478.45	Wyatt Draw - Saline	Natrona	DWF/B	R4SB	27/8	0.000
MP 479.91*	Unnamed Drainage - Range	Natrona			/	0.000
MP 483.42*	Unnamed Drainage - Range	Natrona			/	0.000
MP 483.43*	Unnamed Drainage - Range	Natrona			/	0.000
MP 483.97*	Unnamed Drainage - Range	Natrona			/	0.000
MP 485.25*	Middle Fork Casper Creek - Range	Natrona	SWF	R2UB	6/10	0.012
MP 486.41*	Unnamed Drainage - Range	Natrona			0/2	0.000

Wetland Waters of the U.S. in Wyoming (Continued)

Mile Post	Site Name/Land Use	County	Wetland Type		Wetland WUS/ Nonwetland WUS Approx. Crossing Dist. (Ft.)	Approx. Wetland WUS Acreage within 90' ROW
			Community Type ¹	Cowardin Classif. ²		
MP 486.48*	Unnamed Drainage - Range	Natrona			0/2	0.000
MP 486.68*	Unnamed Drainage - Range	Natrona	DWF/B	R4SB	2/4	0.000
MP 487.73	Middle Fork Casper Creek Tributary - Range	Natrona	DWF/B	R4SB	5/1	0.000
MP 489.57	Canyon Draw - Range	Natrona			0/10	0.000
MP 490.45	Unnamed Drainage - Range	Natrona			0/7	0.000
MP 490.47	Unnamed Drainage - Range	Natrona			0/2	0.000
MP 490.47	Tributary to Selby Draw - Range	Natrona			0/5	0.000
MP 491.93	Selby Draw - Range	Natrona	IP	PUB	120/0	0.055
MP 492.90	Jack Allen Draw - Range	Natrona	DWF/B	R4SB	12/0	0.025
MP 492.94	Jack Allen Draw - Range	Natrona			0/7	0.000
MP 493.05	Jack Allen Draw - Range	Natrona	DWF/B	R4SB	8/4	0.000
MP 493.22	Unnamed Drainage - Range	Natrona			/	0.000
MP 494.35	Pond - Range	Natrona	IP	PUB	10/0	0.021
MP 495.29	Pond - Range	Natrona	IP	PUB	400/0	0.275
MP 496.92	South Fork Casper Creek - Range	Natrona	DWF/B	R4SB	2/5	0.000
MP 496.96	South Fork Casper Creek - Range	Natrona	DWF/B	R4SB	2/5	0.000
MP 498.19	Unnamed Drainage - Range	Natrona			0/3	0.000
MP 498.35	Unnamed Drainage - Crop	Natrona	DWF/B	R4SB	6/0	0.012
MP 502.16	Twelve Mile Draw - Range - Saline	Natrona	DWF/B	R4SB	8/0	0.017
MP 502.20	Twelve Mile Draw - Range - Saline	Natrona	DWF/B	R4SB	10/0	0.021
MP 502.25	Twelve Mile Draw - Range - Saline	Natrona	SS	PEM	40/2	0.083

Wetland Waters of the U.S. in Wyoming (Continued)

Mile Post	Site Name/Land Use	County	Wetland Type		Wetland wus/ Nonwetland wus Approx. Crossing Dist. (Ft.)	Approx. Wetland wus Acreage within 90' ROW
			Community Type ¹	Cowardin Classif. ²		
MP 503.13	Unnamed Drainage - Range	Natrona			/	0.000
MP 503.26	Unnamed Drainage - Range	Natrona			/	0.000
MP 504.99	Unnamed Drainage - Ruderal - Residential	Natrona	SWF	R2UB	2/2	0.000
MP 505.53	Unnamed Drainage - Ruderal	Natrona	SWF	R2UB	4/2	0.008
MP 505.58	Unnamed Drainage - Ruderal	Natrona	DWF/B	R4SB	4/2	0.008
MP 505.77	Twelvemile Draw - Ruderal	Natrona	DWF/B	R4SB	4/5	0.008
MP 505.90	Unnamed Drainage - Ruderal	Natrona	DWF/B	R4SB	3/10	0.006
MP 506.23	Unnamed Drainage - Crop - Saline	Natrona	MA	PEM	750/0	1.550
MP 506.43	Unnamed Drainage - Crop	Natrona	SWF	R2UB	6/0	0.012
MP 508.57	Unnamed Drainage - Industrial	Natrona	MA	PEM	105/0	0.217
MP 509.13	Seep - Range - Industrial	Natrona	WM	PEM	90/0	0.186
MP 509.46	Sixmile Draw - Disturbed - Industrial	Natrona	SWF	R2UB	2/7	0.004
WYOMING TOTAL					9316/1394	18.493

¹Wetland Community Type Codes:

RWF = River with wetland fringe
 SWF = Stream with wetland fringe
 DWF/B = Linear drainage/swale/coulee with wetland fringe and/or bottom
 WM = Wet meadow

MA = Marsh
 IP = Impounded pond within drainage
 CWF = Canal with wetland fringe (seepage)
 SS = Saline shrub

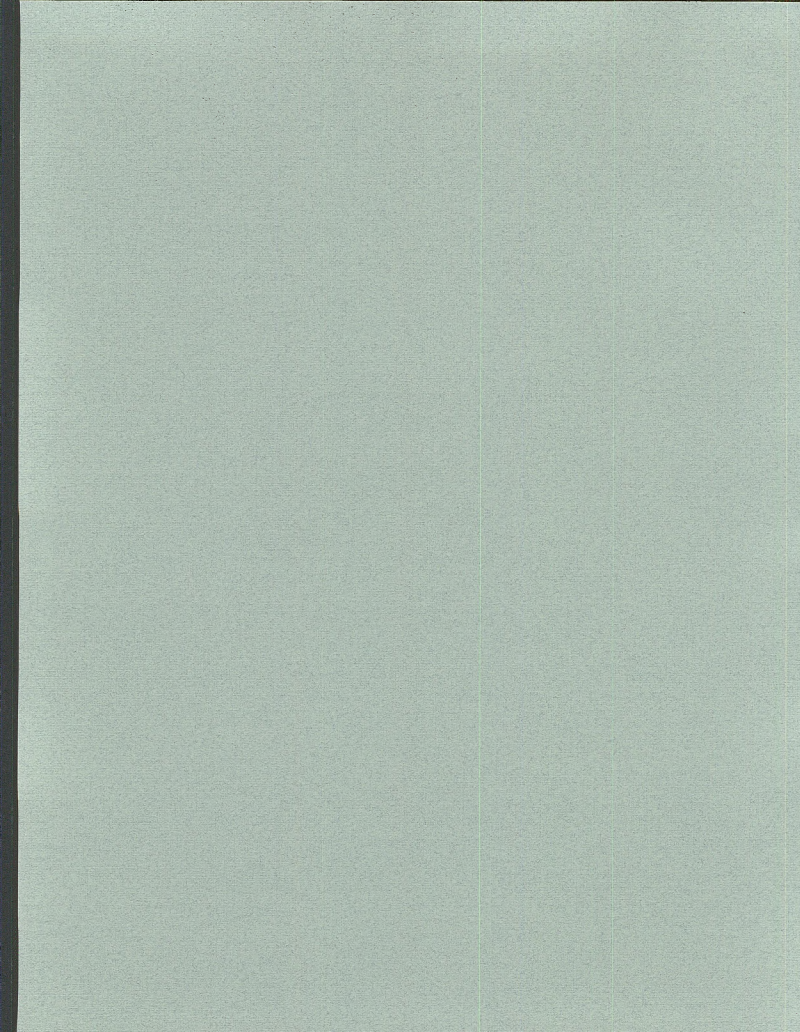
²Cowardin Classification Codes:

R2UB = Riverine - Lower Perennial - Unconsolidated Bottom
 R3UB = Riverine - Upper Perennial - Unconsolidated Bottom
 R4SB = Riverine - Intermittent - Streambed

PEM = Palustrine - Emergent
 PUB = Palustrine - Unconsolidated Bottom

* Sites where off-site analysis was performed as a result of denied access or right-of-way reroutes after on-site analysis was completed.

APPENDIX L
CULTURAL RESOURCES PROGRAMMATIC AGREEMENT



PROGRAMMATIC AGREEMENT

AMONG

THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
THE MONTANA STATE HISTORIC PRESERVATION OFFICER
THE WYOMING STATE HISTORIC PRESERVATION OFFICER
THE U.S.D.I. BUREAUS OF LAND MANAGEMENT AND RECLAMATION
DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION, MONTANA
AND
EXPRESS PIPELINE Inc.

REGARDING THE

EXPRESS PIPELINE PROJECT

WHEREAS, the Bureau of Land Management (BLM), as lead Federal Agency in accordance with the Express Pipeline Project Memorandum of Understanding with the Bureau of Reclamation (BOR), the Montana Department of Natural Resources and Conservation (DNRC), and Express Pipeline Inc., signed *****, proposes to administer the Express Pipeline Project as authorized by Title I and Title II of the Minerals Leasing Act of 1920, as amended (30 USC 185); and

WHEREAS, the Wyoming BLM (through the Worland District Office referred to as the BLM in this document) will act as lead agency for all Federal agencies involved in this project;

WHEREAS, the Express Pipeline Inc. (Express) has applied for and the BLM is considering the issuance of Federal right-of-way grants and associated permits for the project on federal lands administered by both the BLM and the BOR; and

WHEREAS, the former Montana Department of State Lands (DSL) and the DNRC have participated in the development of this document, and will require similar measures as those addressed in this document to issue State right-of-way grants and associated permits on state lands in Montana; and

WHEREAS, the Montana and Wyoming State Historic Preservation Officers (SHPOs), the BLM, BOR, the former DSL, and DNRC have determined that issuance of rights-of-way (ROW) for the Express Pipeline Project, as described in the BLM's Notice of Intent to Prepare an EIS published in the Federal Register, September 7, 1993, will have an effect on properties included in, or eligible for the National Register of Historic Places (historic properties) and have requested the comments of the Advisory Council on Historic Preservation (Advisory Council) pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C

470 as amended) (NHPA) and its implementing regulations (36 CFR Part 800.13); and

NOW, THEREFORE, the signatories to this agreement agree that the proposed project (undertaking) shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties and to satisfy all Section 106 NHPA responsibilities for all aspects of the project.

STIPULATIONS

The BLM shall ensure that the following measures are carried out:

I. Inventory and Evaluation

A. BLM, in consultation with the other parties to this Agreement, has established the Area of Potential Effect (APE) for the project by defining the study area for the project Environmental Impact Statement (EIS). Based on the APE the BLM has initiated efforts to identify interested parties that might wish to be involved in the project.

B. The BLM has initiated efforts to identify Native American peoples with interests in the APE. The results of previous consultations are included in Chapter 3 of the project EIS, and the results of ongoing efforts will be documented in a report to the consulting parties. The concerns of Native American peoples for sites or localities within the APE will be obtained for consideration throughout the implementation of the Agreement. The BLM will consult with the identified Tribes in appropriate style which may include site visits, meetings, letters, or telephone calls to address the concerns identified. BOR, and DNRC will be included in all consultation and communication with Native American groups and other interested parties regarding resources or concerns relating to lands they administer.

C. The known cultural resource sites within the APE have been identified and discussed Chapter 3 of the project EIS. BLM shall ensure that Express completes an intensive pedestrian inventory (BLM-type Class III) of the construction zones which have not been previously inventoried, or areas where the BLM, BOR, DNRC, or the SHPOs determine the results of previous inventories to be inconclusive or inadequate. The consultants performing the inventory work for Express shall obtain the required permits and permissions prior to initiating the work. The inventory will include pump station areas, lateral areas, borrow areas, haul roads, staging areas, and other ancillary areas related to the undertaking, and be consistent with the Secretary of the Interior's Standards and Guidelines for Identification of Historic Properties (48 FR 44720-23).

D. Express shall provide the BLM with separate intensive inventory reports for Montana and Wyoming. Any additional ancillary facilities or reroutes will be addressed in addendums to the appropriate state report and provided to the recipients of that report. The BLM will coordinate consultation among the parties to this agreement. BLM shall ensure that reports documenting the inventory results, historic properties evaluation recommendations, and other related historic properties investigations, will be distributed to the parties to this Agreement and interested Tribes for review. BLM may require Express to distribute reports or other documentation to the reviewing agencies.

E. BLM shall ensure that concurrent receipt and review of reports and site documentation by appropriate Federal and State agencies is completed. The Federal and State agencies (other than the SHPOs) participating in this Agreement shall have 30 calendar-days to review the inventory and evaluation reports and comment upon them to the BLM. These comments will address the eligibility of cultural resources identified for inclusion on the National Register of Historic Places (National Register) and the effects of the project on any cultural resources considered to be historic properties. Based on the comments received the BLM will require Express to revise the reports. Any revised reports will be submitted to the same agencies which received the original reports for a final 15 work-day review. If any party has an objection to the revised report they shall notify BLM within the 15 work-day review period in accordance with subsection G. below. The Federal and State agencies (other than the SHPOs) participating in this Agreement will provide to the BLM for the appropriate sites, their determinations of site eligibility and the results of the their application of the criteria of effect at 36 CFR 800.9.

F. The BLM will provide to the SHPOs for a 30 calendar-day review and comment period the revised reports and findings on eligibility and project effect. BLM shall seek consensus determinations with the appropriate SHPO of eligibility for all properties identified in the APE.

G. If consensus among the BLM, the appropriate SHPO, Federal and State agencies, and Interested Parties on the eligibility of any cultural resource cannot be reached, BLM shall obtain a determination from the Keeper of the National Register (Keeper). The Keeper's determination will be final.

II. Treatment Plan for Historic Properties

A. The preferred treatment alternative is avoidance of effects on historical properties by project relocation.

B. Upon completion of Stipulation I. F. or G. Express will

develop for Montana and Wyoming Treatment Plans which set forth means to avoid or mitigate the project's adverse effects to historic properties where it is not feasible and prudent to avoid effects to historic properties by project relocation. These treatment plans will address all historic properties in the appropriate State for which effects are anticipated. Comments from the BLM, SMAs, the appropriate SHPO, interested parties, and the Advisory Council will be addressed in preparation of the treatment plans. The treatment plans will be in conformance with the principles in Part I and the recommendations in Part II of the Advisory Council's "Treatment of Archaeological Properties: A Handbook" and the "Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation" (Federal Register, Vol. 48 No. 190, September 29, 1983, pp. 44716-44742).

C. Each treatment plan will be developed by Express with the active participation of the BLM and the appropriate SMA and SHPO. The measures to be implemented will be sensitive to the concerns of Native American peoples raised during the consultation processes. The treatment plans will include, but not be limited to:

1. Specification of all historic properties and portions of historic properties to be affected by the project, including a description of the nature of the effects;
2. A detailed description of the treatments proposed for historic properties eligible for the National Register under criteria (a), (b), and /or (c) at 36 CFR part 60.4 or portions of such properties, with an explanation or rationale provided for the choice of the proposed treatments. Where appropriate existing landforms and rolling topography shall be used to the maximum extent feasible to reduce the visibility of the pipeline route from sensitive areas. Revegetation in the vicinity of the sensitive areas will be designed to ensure maximum vegetative blending within five years of completion of construction. Other appropriate measures to protect critical elements of the setting of historic properties may be employed;
3. An archaeological research design will be developed for historic properties eligible for the National Register under criterion (d) found at 36 CFR part 60.4. The research design will specify and explain the:
 - a. research questions to be explored with the data recovery efforts;
 - b. data needed to explore the questions posed;
 - c. sites and portions of each of those sites to be further investigated;
 - d. methods to be used to collect data needed to explore the research questions posed;

- e. justification of the appropriateness of the chosen research questions;
- f. proposed disposition of the recovered materials and records;
- g. The timing for the preparation and distribution of reports.

4. A description of the areas of the project proposed for controlled grading, construction monitoring (a qualified archaeologist present to observe ground surfaces exposed during the actual construction activities), and construction inspection (a qualified archaeologist conducting an inspection of areas of ground disturbance after specific phases of construction are completed). A justification or rationale for the areas proposed will be included in the treatment plan.

5. A listing of all historic properties that will be affected by the project for which no further treatment is proposed, with a justification or rationale.

6. An explanation of the methods for involving the interested public in the data recovery, and for disseminating the results of the data recovery to the interested public. These methods will be consistent with the Archaeological Resources Protection Act, Native American Grave Protection and Repatriation Act, and the Freedom of Information Act.

III. Review of the Treatment Plans

A. The BLM will review the Treatment Plan provided by Express to assure that it addresses the concerns of the consulting parties involved in its preparation in accordance with II.C. above. The Treatment Plan shall then be submitted to the BLM Field Offices, BOR, DNRC, Advisory Council, and SHPOs for their review. The reviewing parties shall have 30 calendar-days to comment on the Treatment Plan. If any party to this Agreement fails to comment within the review period the BLM shall assume that party's concurrence. Based on the comments received during this review, the BLM will direct Express to make any required revisions.

B. The revised Treatment Plan shall be submitted to the BLM. The BLM will assure that the required changes have been incorporated and then forward to the BLM Field Offices, BOR, DNRC, Advisory Council, and SHPOs for their review. The reviewing parties shall have 15 work-days to comment on the revised Treatment Plan. If any party to this Agreement fails to comment within the review period the BLM shall assume that party's concurrence.

C. The final decision on the acceptability of the treatment plan will be made by the BLM, any disputes will be resolved in accordance with Stipulation VIII. Upon BLM acceptance of the Treatment Plan, it will be incorporated into the Construction and Use Plan required for the project ROW grant, and the BLM and/or the appropriate Federal/State SMA shall provide authorization to proceed with the implementation of the Treatment Plan. This authorization will include Archaeological Resources Protection Act (ARPA) excavation and removal permits for Federal lands. Termination of the project after initiation of the Treatment Plan will require completion of work in progress, and amendment of the Treatment Plan as described below. Amendments to the Treatment Plan will be incorporated by written agreement among the BLM, affected SMA, the appropriate SHPO, Express, and the Advisory Council. Amendments to the appropriate ARPA permits will be included in the approval of the amendments. Reports will be provided to the BLM, SMAs, and SHPOs every two weeks documenting progress in the implementation of the Treatment Plan. These reports will include:

1. dates of mitigation work included in the report;
2. historic properties where treatment was conducted;
3. type and amount of treatment performed;
4. very brief summary of the results of the treatment during the period covered by the report;
5. concerns or comments of the project principal investigator.

D. Upon acceptance by the BLM, appropriate SMAs, and SHPO of documentation that the Treatment Plan for a spread of the project has been completed construction may be authorized within that spread by the BLM and/or the appropriate SMAs. Construction of pumping stations located in negative inventory areas for which reports have been accepted by the appropriate SMA and SHPO may be authorized in advance of authorization of the construction of the spread.

IV. Changes in Ancillary Areas/Construction ROW

A. The BLM will notify the consulting parties and interested Tribes of changes in ancillary areas or the construction ROW. The BLM will ensure that the construction zone of the new ancillary area or reroute is inventoried. The reports addressing these areas will be reviewed in accordance with Stipulation I except there will be 10 work-days for the review of both the initial or a revised inventory and evaluation reports by the BLM and SMAs.

B. The BLM will provide to the SHPOs for a 20 work-day review and comment period the revised reports and findings on eligibility and project effects. BLM shall seek consensus determinations of eligibility for all properties identified in the APE. If consensus can not be reached the process at

Stipulation I.G. will be followed.

C. A Treatment Plan Amendment will be prepared for any historic properties within the additional APE in accordance with Stipulation II except there will be 20 work-days for the review for both the initial or a revised Treatment Plan Amendment by the consulting parties and interested Tribes. Upon acceptance of the amendment by the BLM it will be incorporated into the treatment plan in accordance with Stipulation III.C.

V. Documentation of Treatment

A. A report will be prepared to document the results of the Treatment Plan. This report will be the Final Cultural Resource Report for the project. The report will contain a synthesis of the information gained during the project in addition to the information relating to the work required to mitigate the effects of construction. The report will be provided by Express to the BLM for distribution to the parties to this Agreement for review. The reviewers will have 90 calendar-days to review and comment on the report. The BLM will provide the consolidated comments to Express, Express will provide the Final Cultural Resource Report to the BLM for distribution within 120 calendar-days of receipt of the comments from BLM.

VI. Curation

A. The BLM, and the appropriate SMA's shall ensure curation of all records and other items resulting from identification and data recovery efforts is completed in accordance with 36 CFR Part 79, and the provisions of the Native American Graves Protection and Repatriation Act (PL 101-601) (NAGPRA). Documentation of the curation of these materials shall be provided to the BLM, and the appropriate SMA and SHPO within 30 calendar-days of acceptance of the Final Cultural Resource Report for the Project.

B. The BLM will encourage private land owners to curate collections from their lands in an appropriate facility. Materials from private lands to be returned to the private land owners shall be maintained in accordance with 36 CFR Part 79 until any specified analysis is complete. Documentation of the return of these materials to the private land owner shall be provided to the BLM and the appropriate SHPO within 30 calendar-days of acceptance of the Final Cultural Resource Reports for the Project.

C. Materials from state lands in Montana will be returned to the DNRC for curation. These materials shall be maintained in accordance with 36 CFR Part 79 until any specified analysis is complete. Documentation of the return of these materials to the DSL shall be provided to the BLM and the appropriate SHPO within 30 calendar-days of acceptance of the Final Cultural Resource

Reports for the Project.

VII. Human Remains

A. The BLM shall ensure that any human remains encountered during the course of this undertaking are treated in a respectful manner. No construction activities will be allowed in the vicinity of the discovery until written authorization is provided by the BLM. A reasonable and good-faith effort shall be made to identify the appropriate Native American tribe(s), or other ethnic group(s) related to the burial. The BLM will consult with the appropriate group regarding the appropriate treatment of the remains and associated grave goods. The BLM shall ensure that any human remains and associated funerary objects excavated during the Express project are treated in accordance with the wishes of the descendants or the authorized group after completion of analysis specified in the Treatment Plan.

B. If human remains are encountered on Federal lands the appropriate SMA shall consult with the Native American tribe or other ethnic groups related to the human remains identified to determine the treatment and disposition measures consistent with the applicable Federal laws (eg. NAGPRA), regulations, and policies.

C. If human remains are encountered on State or private lands, BLM shall ensure, in consultation with the appropriate SHPO and the Native American tribe or other ethnic groups related to the human remains, that they are treated according to the provisions of the applicable State laws, regulations, or policies.

VIII. Dispute Resolution

A. Should any party to this Agreement provide notice to the BLM of their objection to an action under this Agreement, or implementation of the measures stipulated in this Agreement within 30 calendar-days of becoming aware of an action the BLM shall consult with the objecting party to resolve the objection unless otherwise specified in this document. If the BLM determines that the objection cannot be resolved, the BLM shall forward all documentation relevant to the dispute to the Advisory Council. Within 30 calendar-days after receipt of all pertinent documentation, the Council shall either:

1. provide BLM with recommendations, which BLM shall take into account in reaching a final decision regarding the dispute; or
2. notify BLM that it will comment within an additional 30 calendar-days in accordance with 36 CFR Part 800.6(b). Any Advisory Council comment provided in response to such a request will be taken into account by BLM in accordance with

36 CFR Part 800.6(c)(2) with reference to the subject of the dispute.

Any recommendation or comment provided by the Advisory Council will be understood to pertain only to the subject of the dispute; the BLM's responsibility to carry out all actions under this agreement that are not the subject of the dispute will remain unchanged.

IX. Amendment

Any party to this Agreement may request that it be amended, whereupon the parties will consult in accordance with 36 CFR 800.13 to consider such amendment.

X. Termination

Any party to this Agreement may terminate it by providing 30 calendar days written notice to the other parties, the parties shall consult during the period prior to the termination to seek agreement on amendments or other actions that would avoid termination. The Advisory Council will be afforded an opportunity to comment during this period as well. In the event of termination, the BLM will comply with 36 CFR 800.4 through 800.6.

XI. Failure to Carry Out the Terms of the Agreement

In the event that the terms of this Agreement are not carried out, the BLM shall comply with 36 CFR 800.4 through 800.6 with regard to individual actions covered by this Agreement.

Execution and implementation of this Agreement evidences that the BLM and the BOR have satisfied their National Historic Preservation Act Section 106 responsibilities and the Montana Department of State Lands has satisfied its obligations under the Montana State Antiquities Act for all individual actions of the Express Pipeline Project.

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By: Robert W. Bush
Executive Director,

Date: 8/10/95

BUREAU OF LAND MANAGEMENT

By: David P. Baumes
District Manager,

Date: 7/24/95

BUREAU OF RECLAMATION

By: Neil Stearns Date: 7/26/95
Regional Director

MONTANA STATE HISTORIC PRESERVATION OFFICER (Interim)

By: Mark F. Zaunler Date: 7/27/95

WYOMING STATE HISTORIC PRESERVATION OFFICER

By: John I. Keck Date: 7/28/95

DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION, MONTANA

By: Bud Clark Date: 7-27-95
Director

Concur:
EXPRESS PIPELINE Inc.

By: R. Towle
Senior Vice-President

Date: 8/16/95



APPENDIX N
POTENTIAL ECONOMIC EFFECTS IN WYOMING FROM THE
EXPRESS PIPELINE



Introduction

The potential impact of the Express pipeline on the Wyoming oil industry was raised as an issue in the DEIS. Commenters were concerned that the influx of Canadian crude via the Express pipeline would adversely affect future Wyoming production levels, prices and the subsequently the Wyoming taxation base. The BLM retained an independent economic consulting firm, Planning Information Corporation (PIC), to analyze the potential impacts.

Wyoming Oil Production and Exploration

Production

Oil was first discovered in Wyoming near present day Lander in 1833. The greatest period of expansion in oil production began during World War II and continued until 1961. Oil production peaked in 1970 with about 156 million barrels per year. Although the OPEC price increases spurred waves of exploration in the 1970s and early 1980s, annual crude production has declined by almost 49 percent since 1970. Most recently, the decline rate has been approximately 6.5 percent annually from 1991 to 1994. By 1994, annual production was about 78 million barrels.

A variety of different types of crude are produced in Wyoming. About 65 percent of Wyoming oil production is sour crude, while the remaining 35 percent is comprised of a variety of sweet crudes (Basko 1995). Sour crude is further separated into heavy/asphaltic and general sour. General sour crude typically sells for a lower price than sweet or asphaltic crudes. However, a premium is presently being paid for all Wyoming crude oil because of short supplies.

In 1994, the largest 25 fields in Wyoming accounted for slightly over half of the annual crude oil production. Wyoming's largest oil-producing regions (in order of production) include the Powder River Basin, Green River Basin, Big Horn Basin, Overthrust Belt, and Wind River Basin. Of the 25 largest producing fields, the average age is 50 years. The newer fields are concentrated in the Powder River Basin and Overthrust Belt. Although many of the largest producing fields in Wyoming are more than 70 years old, it may be a number of years before these fields reach the end of their economic lives. The economic life and profitability of an oil field depends on many factors such as the price of oil, type of oil produced, production level, lifting costs, taxes and other expenses. Although some of the large producing fields may be nearing the end of their economic life, the information is considered proprietary and confidential by the operators. Moreover, some operators are extending the life of their fields through cost-reduction techniques, such as right-sizing of electric motors, and advanced production techniques, such as enhanced recovery and horizontal drilling.

Exploration

Oil exploration in Wyoming has occurred at a fairly constant level over the past five years (Wyoming Geological Survey 1995). Since 1986, the annual average rig count number has remained fairly consistent at about 35. However, the number of rigs involved in oil exploration has declined and the number used for gas exploration and development has increased since 1990. The

number of new oil fields discovered in Wyoming in each of the last five years has decreased from 12 in 1991 to four in 1994.

According to the sources interviewed for this analysis, stable prices should be sufficient to maintain the current level of exploration, field development, and redevelopment activity. Sustained prices in the neighborhood of \$20 to \$25 per barrel would be required in order to stimulate substantial additional exploration.

New Exploration Technology

Application of new technology has the potential to increase oil production in some fields and, therefore, reduce the rate of decline in overall Wyoming production. Three-dimensional seismic technology can be used to reduce the risk of drilling a dry hole by more accurately locating oil deposits. This technology is being used to spur significant new exploration, development, and production in the Lodgepole play in western North Dakota. This new play has resulted in substantial new production in the area and helped reduce the rate of decline of oil production in North Dakota (Rygh 1995).

The use of horizontal drilling technology in the Red River Valley of North Dakota has also helped slow the rate of decline in North Dakota production. Horizontal drilling is being used in some older fields in Wyoming as well. This technology can be used where oil is trapped in narrow, vertical fields. In 1994, there were 22 horizontal well completions in Wyoming, compared to 28 in 1993. Horizontal drilling is much more costly than vertical drilling. For this reason, application of horizontal drilling technology may be very dependent on oil prices.

Enhanced oil recovery (EOR) technologies have also been effective at slowing the decline of production in some older fields, such as Lost Soldier, Oregon Basin, and Wertz. EOR techniques include water injection (secondary recovery) and water-polymer, CO₂, or other types of injection or reservoir flooding (tertiary recovery). However, substantial capital investment is required to implement EOR. Therefore, EOR is also very dependent on oil prices.

It is unlikely that application of the above-referenced technologies will cause oil production in Wyoming to increase above current levels. However, with stable or slightly higher prices, they offer a real possibility to slow the decline in oil production experienced in recent years. The estimated 1995 production decline of only 1.5 percent is evidence that such a reduction in the rate of decline is possible.

Wyoming Refining Capacity

Since 1981, ten refineries have closed in Wyoming (EAI 1995). The largest of these were the Amoco and Texaco refineries in Casper. The closed refineries represented about 42 percent of the State's refining capacity (a loss of 96,000 BPD). Declining local supplies of crude were only one reason for the closing of these refineries. It is generally believed that another reason for the shut-down of some refineries was the cost of meeting more stringent environmental regulations. The remaining four refineries in Wyoming have a crude capacity of about 138,000 BPD, or about 50.8 million barrels per year. **Table N-1** shows the location of the refineries, and crude types preferred.

Table N-1. Operating Wyoming Refineries 1994

Company/Location	Crude Capacity (BPD)	Sweet Crude (BPD)	Sour Crude (BPD)
Frontier/Cheyenne	41,000	6,150	34,850
Little America/Casper	24,500	15,925	8,575
Sinclair Oil/Sinclair	60,000	33,000	27,000
Wyoming/Newcastle	12,555	12,555	
Totals	138,055	67,630	70,425

Sources: EAI, Frontier Refining, Sinclair Oil.

Production of oil in Wyoming will not be sufficient to satisfy the needs of Wyoming refineries through 2005 as evidenced by the fact that general Wyoming sour crude is already in short supply. Additionally, a portion of Wyoming crude production is marketed to other PADD IV refineries in Montana, Colorado, Utah, and in the Midwest. Regional Rocky Mountain production is currently well below the level of demand of Rocky Mountain refineries. Most Wyoming sweet crude remains in the PADD IV region, while some sour crude has been exported in the Midwest through the Amoco and Platte pipelines. These exports have been declining.

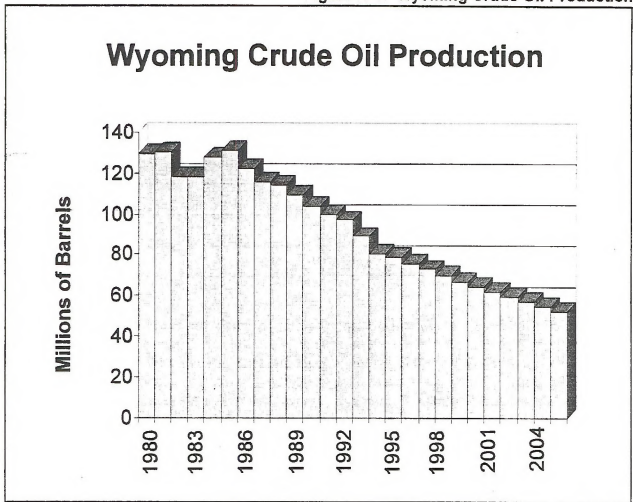
As Wyoming oil production has declined in recent years, traditional customers have looked elsewhere for stable supplies. The quantity of Wyoming oil used by Billings area refiners has decreased by almost 29 percent since 1989 (OERP 1995). Over the same period, Wyoming oil production declined by 26.5 percent. To replace declining Wyoming production, these refiners increased imports of Canadian oil by 29.1 percent from 1989 to 1994.

The opposite situation has occurred in the Salt Lake City refining market. Since 1989, the quantity of Wyoming oil used by these refiners has increased by 33.4 percent from 19.7 million barrels in 1989 to 26.2 million barrels in 1994. Utah refiners have been forced to supplement declining local production with Wyoming crude, which is their most readily available source.

Projected Wyoming Oil Production

The Wyoming production projections from present to 2005 are based on the annual rate of decline agreed upon by the Wyoming Consensus Revenue Estimating Group (CREG 1995). The CREG, comprised of State government staff from several departments; meets annually to forecast State of Wyoming revenues from various sources. The CREG projects an annual rate of decline in crude oil production of four percent for 1996 to 2005. **Figure N-1** shows the production since 1980 and the projected production to 2005 based on the CREG projected decline rate of 4.0 percent.

Figure N-1. Wyoming Crude Oil Production



Sources: Wyoming Oil and Gas Conservation Commission, PIC Projections

Price Effects of Declining Production

Bonus Payments

Because Rocky Mountain (RM) refineries were designed to refine locally-produced crudes, refinery operators prefer to purchase local crudes when they are available. As production in the RM region has decreased over the past decade, regional supplies of oil have become more scarce for area refineries. Premiums for locally-produced crude oil have been paid by refineries in the region for a number of years. Premium levels have been affected by the decline in RM oil production and transportation cost differentials of alternative supplies of crude oil. Over the past three to four years, these premiums have increased from about \$1 per barrel to more than \$4 per barrel for Wyoming general sour crude. The increase in premiums paid for local crude oil emphasizes the increasing shortage of oil for area refiners.

Pipeline Responses

The major pipelines bringing oil into the RM region are the Rangeland, Milk River and Wascana. Due to the number of pipeline transfers on these routes, the Salt Lake City refiners are concerned about consistent quality of crude (Garner 1995). At the present time, pipelines used to bring alternative crude oil supplies into the region are responding to the increasing demand in PADD IV. Some of these are listed below (Stamp 1995).

- Cenex Pipeline is installing a 16" line from Cut Bank, Montana to Laurel, Montana. This line will provide up to 65,000 BPD of Canadian crude to the Billings market.
- Amoco and Conoco have announced a joint venture to install 75 miles of 12" pipeline from Billings, Montana to Elk Basin, Wyoming. This line will supply up to 40,000 BPD of Canadian crude through the existing Conoco and Amoco pipelines to PADD IV refineries.
- The network of seven pipeline companies operating lines from Edmonton, Alberta to Salt Lake City have announced a discount of 21 percent in the total tariff to Salt Lake City.

The current tariff on the Rangeland-Glacier-Amoco pipeline to Casper is \$2.40 per barrel (EAI 1995). The tariff on the IPL-Wascana-Texaco-Butte-Permian route to Casper is \$1.80 per barrel. Salt Lake City is the greatest pipeline distance from the Canadian crude supplies, therefore, refineries in the Salt Lake City area are having difficulty meeting demands for crude oil. A reduction in tariffs from Edmonton to Salt Lake City could provide some relief to Salt Lake City area refiners.

Impacts of the Express Pipeline

The potential impact of the Express Pipeline on oil prices in Wyoming will depend on a variety of factors. Two key factors will be the quantity of Canadian crude oil demanded in PADD II and the prices of Canadian crudes. Other important factors to consider will be the rate of decline in RM crude production, expansion of other crude pipelines serving the area, the number of existing refineries that remain in operation, whether new product pipelines are constructed, and the price at which competing crude oil supplies can be sold. This analysis examines the potential effects of the proposed action presented in the DEIS. Following this analysis, issues that may substantially alter this estimate of the impacts of the Express pipeline are identified.

Oil Supply

The Express Pipeline, as proposed, would initially transport 143,000 BPD of crude oil from production fields in Alberta, Canada to Casper, Wyoming. The quantity shipped could increase gradually to 274,000 BPD in 2005 if sufficient markets are obtained. The initial amount of crude to be transported represents about 39 percent of estimated 1995 RM region oil production. The Express proposal is based on a projected deficit of crude oil supply of about 151,000 BPD in PADD IV (in 1996) and a demand for about 70,000 BPD in the Wood River and Mid-Continent areas of PADD II. According to the analysis presented in **Table N-2**, the shortage of crude in the RM region will grow from 11,000 BPD in 1999 to about 74,000 BPD in 2005 without Express. This analysis does not include the potential increase in imports associated with the proposed Amoco/Conoco pipeline, which could provide another 40,000 BPD of Canadian oil to the RM region.

The crude oil transported through the Express pipeline is expected to be more than enough to satisfy the demand for crude from refineries in PADD IV. At least a portion of the remaining crude is expected to be transported to PADD II. The impact on the price of oil in the RM region will be determined by the reduction in transportation costs associated with Express and the magnitude of the surplus of crude remaining to be sold in the RM region. It should be noted that excess capacity currently exists in pipelines transporting Canadian crude into the RM region. A comparison of supply and demand for crude in the RM region with the Express pipeline is presented below in **Tables N-2 and N-3**, assuming import levels on existing pipelines remain constant.

It is likely that Express will attract a substantial portion of the oil currently being shipped to the RM region through the Rangeland and Wascana pipelines due to its lower tariffs. However, the increased competition among pipelines is likely to reduce shipping tariffs for all pipelines shipping crude oil into the RM region. With Express, it would be possible for Canadian producers to dump large quantities of crude oil into the RM region. However, as long as markets exist for Canadian crude at world prices, this is not expected to occur. RM refiners may be willing to continue to pay some premium for local crudes based on design requirements of their facilities and transportation costs associated with imported oil.

Oil Price

The analysis of potential changes in crude oil prices depends on a wide range of factors, including refinery operations, drilling, production and refining technology, world oil production and prices,

changes in crude oil and product pipeline systems, and world politics. Projections of future oil prices are fraught with uncertainty and the best approach is to present a reasonable scenario based on currently-available information. This analysis of potential price impacts is meant to depict what might be considered a most likely scenario and is based on the following assumptions:

- 1) Technology and world crude oil prices will remain in their general current condition. (Changes in technology and world markets would affect both Canadian and Wyoming producers.)
- 2) Prices for Canadian crude are determined by the world market and Canadian producers will be unwilling to discount those prices in order to gain a market share in the RM region. (Excess shipping capacity currently exists that is not being used and no data were available to contradict this assumption.)
- 3) Canadian crude will continue to supplement declining RM crude production without displacing RM production. (RM refiners will continue to prefer local crudes based on the design of their facilities.)
- 4) Increasing bonuses for Wyoming crude are a reflection of shortages in some markets. (This is based on data on declining production and rising bonuses over the past four years.)
- 5) The Salt Lake City market is experiencing the most acute crude shortage in the RM region because of its location relative to the existing pipeline network and the type of crude needed by area refiners (Garner 1995).
- 6) Express will reduce shipping tariffs for crude imported from Canada to various markets in the RM region by as much as 15 to 25 percent (DEIS, EAI, PIC estimates).

The Express pipeline would provide a reliable supply of crude oil for RM region refineries at competitive transportation costs. This shift in the RM oil market would enhance the viability of area refineries by providing a stable supply of alternative crudes to supplement declining RM production. The continued viability of the region's refining industry is in the interest of RM producers because many of these refineries will continue to prefer local crudes based on the design of their facilities.

Posted prices for Wyoming and other crudes in the U.S. are generally based on formulas comparing the quality of different crudes with the West Texas Intermediate (WTI) standard. The formulas take into account the differences in gravity, sulfur content, and refining yield. Bonuses are typically paid in different markets to allow adjustments for regional market conditions. The use of bonuses allows purchasers to adjust contracts without constantly changing posted prices or the formulas from which they are derived.

The prices paid for Wyoming crudes by refiners are determined to a large extent by the price of WTI with adjustments for gravity, sulfur content, and local market conditions. Wyoming crude prices have been positively affected by the decline of oil production in the region. Producers in the RM region have been somewhat sheltered from competition because of their location. Alternative crude supplies have not always been available and higher transportation costs have been the rule when alternative supplies have been available. This situation has placed the RM refining industry at a competitive disadvantage compared to coastal refiners with readily-available supplies of oil at

world prices. It is uncertain how much longer some refiners in the RM region will be able to compete with product pipelines from other regions without a reliable alternate source of crude.

The decline in RM production over the past few years has created market conditions for specific types of crude in certain markets where, at times, prices have been above normal levels. These situations are most likely to occur when shortages of a particular type of crude are experienced without a readily available substitute. Such shortages have occurred with southwest Wyoming sweet in the Salt Lake City market and general sour in the Wyoming and Denver market. Prices currently paid for Wyoming crude include bonuses of about \$2.25 for sweet and \$4.50 for general sour.

The existing and announced pipeline network has the capacity to provide an adequate supply of crude to the RM region through the year 2002 without Express (EAI 1995). However, the existing pipeline network is limited in its ability to provide certain types of crude demanded in the RM region with consistent quality. This is a particular problem for the Salt lake City market (Garner 1995). The reliable supply of crude provided by the Express pipeline could substantially alter the Salt Lake City market by providing a reliable source of the sweet and ultra-sweet crudes needed there.

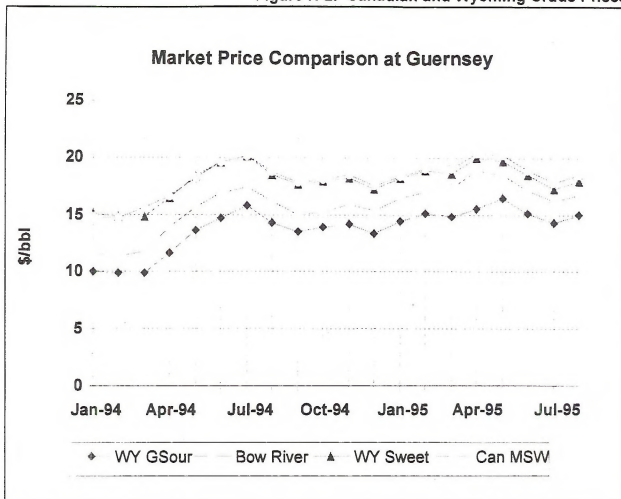
Based on the assumptions that Express will not cause a dramatic change in transportation costs to PADD IV and that Canadian producers will not lower their prices to penetrate the RM market, Express is not expected to cause a substantial supply shock. The pipeline could alter conditions in certain local markets and prevent shortages of certain crude types. Canadian crudes that are available to be shipped through the pipeline would be relatively comparable to most crudes produced in the region. For example, Canadian MSW crude could serve as a relative substitute for Wyoming sweet and synthetic crude could serve as a substitute for southwest Wyoming sweet. Given access to substantial supplies of substitute crudes, RM refiners may no longer be willing to pay above normal prices to obtain local crudes. RM refiners would probably continue to prefer local crudes because of their process design. However, a reliable supply of quality substitute crudes could improve the ability of RM refiners to compete against product pipelines from other regions, maintaining the local markets for RM crude production.

Canadian producers determine their posted price based on Chicago Mercantile Exchange crude prices. The primary U.S. market for Canadian crude is PADD II. As long as the Canadian producers can sell crude at competitive world-market prices, they are not expected to make discounts to gain share in the RM region. Thus, Canadian crude will continue to supplement declining production in the region rather than displacing RM production. In order for Express to attract and maintain a significant share of the crude shipping market, transportation costs for Canadian crude will be reduced somewhat (no more than 15 to 25 percent) for shipments into PADD IV. The increased competition for crude pipeline operators is expected to affect tariffs on all competing pipelines.

In general, if the supply of a commodity increases in a market while demand remains constant, the price of the commodity can be expected to fall. In this case, there are two commodities that are not exactly homogeneous. The posted prices of Canadian sour crudes plus transportation costs are typically higher than the market prices of comparable Wyoming crude. Posted prices of Canadian mixed sweet plus transportation costs are slightly below to slightly above the prices of comparable

Wyoming crudes (Northridge 1995). The comparisons, based on prices at Guernsey, Wyoming with existing tariffs, are illustrated on Figure N-2.

Figure N-2. Canadian and Wyoming Crude Prices



Based on the tariffs proposed by Express, and the assumption that an excess supply of crude oil will not be available in the RM region, a substantial supply shock is not anticipated. Under this scenario, the likely effect would be a reduction of the premiums currently being paid for southwest Wyoming sweet crude. The amount of the reduction would depend on the posted price of Canadian crude and the tariff charged for delivery. With the assumption that posted prices of Canadian crude at Hardisty will continue to be determined by the world crude market, the price of Canadian Bow River crude is expected to remain at or above the price of Wyoming general sour crude.

As illustrated on Figure N-2, Canadian sweet crude is currently priced competitively with Wyoming sweet crude. Canadian synthetic crude (Bow River) is currently priced below southwestern Wyoming sweet. It is expected that Express could cause a reduction in the market price for southwestern Wyoming sweet and that any reduction in shipping tariffs could cause the market price of Wyoming sweet to fall as well. The prices of Wyoming general sour and asphaltic crudes are not

expected to be impacted significantly by Express. Prices received by Wyoming sweet crude producers may decline by about \$.50 to \$1.50 per barrel. The following analysis is based on an estimated market price reduction of \$1.00 per barrel for Wyoming sweet crudes.

The \$1.00 per barrel price reduction conclusion is based on current price differentials and the assumption that Express would provide a reliable supply of relatively comparable crudes to RM refiners at very competitive transportation costs. Since sweet crude comprises only about 35 percent of Wyoming production, the overall income and tax revenue effects would be similar to a \$.35 per barrel decline for all Wyoming crude prices. Producers of southwestern Wyoming sweet and Wyoming sweets would be impacted by the expected price reduction. Changes in a number of factors mentioned above could cause the price reduction to be greater or less than what has been estimated. Price impacts could be significantly different if any of the assumptions outlined above turn out to be incorrect. In any case, Express would enable RM refiners, especially in the Salt Lake City market, to remain viable in a competitive marketplace providing a continued local demand for Wyoming and RM crude production.

In the long run, the price differential between Wyoming crudes and comparable Canadian crudes should be determined by yield differentials and transportation costs. RM producers will continue to enjoy a locational advantage in PADD IV. RM refiners will very likely continue to favor local crudes because of their feedstock preferences.

Secondary Price Impacts

The anticipated price reduction of \$1.00 per barrel for sweet crude would impact some producers and some areas of Wyoming more than others (e.g., southwestern Wyoming). The expected price reduction could potentially reduce the amount of oil exploration in southwestern Wyoming. It could also cause some additional shut-in or cause redevelopment programs in some fields to be discontinued. The reductions in incomes to sweet crude producers could affect the level of drilling activity as well.

The overall rate of decline for Wyoming crude oil production is not expected to be measurably affected by a price change of \$1.00 per barrel for sweet crude. The rate of decline is much more likely to be affected by world oil prices. The decline in prices paid to Wyoming sweet crude producers is not expected to reduce the overall potential for application of new or advanced technologies to stabilize oil production. However, Wyoming sweet crude producers may be somewhat less likely to make the substantial capital investment associated with enhanced oil recovery. Oil exploration in the region should not be significantly affected by the projected \$1.00 per barrel decline in sweet crude prices. The potential for application of 3-D seismic technology may be adversely affected for some fields or regions. The expected price impact should not adversely affect the level of horizontal drilling but would reduce the rate of return on wells producing sweet crude. Most of the factors mentioned above tend to be driven by price. Therefore, they could be affected by Express, but are much more likely to be driven by major fluctuations in world oil prices.

Income and Employment Impacts

Wyoming's economy depends heavily on mineral production, including oil and gas, and the Wyoming state government relies on mineral production for a substantial portion of its tax revenue. Consequently, the State may be more vulnerable to fluctuations in the oil market than other states in the Rocky Mountain region. In 1994, oil production comprised about 18.2 percent of the State's total assessed valuation, down from 22.6 percent in 1993 (WTA 1994). The oil and gas industry, including refineries, directly employs about 17,000 people in Wyoming with an annual payroll of more than \$500 million (PAW 1994). Based on a comparison of these figures to total employment and payroll figures from the Wyoming Department of Employment, the oil and gas industry accounts for about 8 percent of covered employment and 10.8 percent of total payroll in Wyoming.

A reduction in the premiums paid for Wyoming sweet crude could reduce income to producers of sweet crudes. The anticipated reduction in price of \$1.00 per barrel could reduce producers' incomes by about \$25.5 million in 1997. Such a price reduction is not expected to accelerate the overall rate of decline in production of Wyoming oil. Based on the projected annual rate of decline of 4.0 percent for the next ten years, the potential loss of income resulting from the \$1.00 per barrel reduction in sweet crude through 2005 could be as much as \$195.8 million.

The decline in income is expected to reduce employment in the oil production sector by about 17 jobs for 1997 above what would be experienced without the Express pipeline. This is based on an estimated input/output relationship between oil production and employment for the State of Wyoming. Employment impacts would be experienced primarily in those areas of Wyoming (southwestern Wyoming and the Powder River Basin) where sweet crude is produced. In addition, the loss of each job in the oil producing sector is expected to result in the loss of 2.5 jobs in other sectors in the Wyoming economy (Taylor 1995). The total potential employment reduction for 1997 resulting from the decline in producer's income could be as high as 60 jobs.

Table N-2. Supply and Demand Summary (BPD) Without Express

Component	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Colorado Production ¹	65,293	64,161	62,246	60,388	58,588	56,843	55,152	53,512	51,922	50,381	48,887
Montana Production ¹	46,123	44,788	43,501	42,279	41,096	39,949	38,838	37,762	36,718	35,706	34,724
Utah Production ¹	37,028	34,622	32,402	30,351	28,455	26,700	25,073	23,565	22,164	20,862	19,650
Wyoming Production ²	216,373	207,718	199,409	191,433	183,775	176,424	169,367	162,593	156,089	149,845	143,852
RM Production	364,817	351,289	337,558	324,451	311,914	299,916	288,430	277,432	266,893	256,794	247,113
Rangeland Imports ¹	105,000	105,000	105,000	105,000	105,000	105,000	105,000	105,000	105,000	105,000	105,000
Wascana Imports ¹	31,481	31,803	32,100	32,377	32,637	32,882	33,115	33,337	33,549	33,753	33,949
Total Canada Imports	136,481	136,803	137,100	137,377	137,637	137,882	138,115	138,337	138,549	138,753	138,949
Available Supply	501,298	488,092	474,658	461,828	449,551	437,798	426,545	415,769	405,442	395,547	386,062
RM Refining Demand ¹	459,701	459,701	459,701	459,701	459,701	459,701	459,701	459,701	459,701	459,701	459,701
Surplus/(Deficit)	41,597	28,391	14,957	2,127	(10,150)	(21,903)	(33,156)	(43,932)	(54,259)	(64,154)	(73,639)
Exports to PAD II ²	42,596	29,000	14,957	2,127	0	0	0	0	0	0	0
Net RM Surplus (Def)	(999)	(609)	0	0	(10,150)	(21,903)	(33,156)	(43,932)	(54,259)	(64,154)	(73,639)
Surplus/(Deficit) Percent of RM Prod.	0.46%	0.77%	79.21%	80.92%	82.25%	90.45%	108.78%	115.98%	123.49%	131.70%	139.35%

Sources: ¹EAI, ²PIC Estimates, Does not specifically include new Amoco/Conoco pipeline.

Table N-3. Supply and Demand Summary (BPD) With Express

Component	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Colorado Production ¹	65,293	64,161	62,246	60,388	58,588	56,843	55,152	53,512	51,922	50,381	48,887
Montana Production ¹	46,123	44,788	43,501	42,279	41,096	39,949	38,838	37,762	36,718	35,706	34,724
Utah Production ¹	37,028	34,622	32,402	30,351	28,455	26,700	25,073	23,565	22,164	20,862	19,650
Wyoming Production ²	216,373	207,718	194,632	182,370	170,881	160,115	150,028	140,576	131,720	123,422	115,646
RM Production	364,817	351,289	332,781	315,388	299,020	283,607	269,091	255,415	242,524	230,371	218,907
Express Imports ³	0	0	143,000	152,789	161,311	181,475	217,391	232,514	247,007	261,500	274,102
Rangeland Imports ⁴	105,000	105,000	105,000	105,000	105,000	105,000	105,000	105,000	105,000	105,000	105,000
Wascana Imports ⁴	31,481	31,803	32,100	32,377	32,637	32,882	33,115	33,337	33,549	33,753	33,949
Total Canada Imports	136,481	136,803	280,100	290,166	298,948	319,357	355,506	370,851	385,556	400,253	413,051
Available Supply	501,298	488,092	612,881	605,554	597,968	602,964	624,597	626,266	628,080	630,624	631,958
RM Refining Demand ⁴	459,701	459,701	459,701	459,701	459,701	459,701	459,701	459,701	459,701	459,701	459,701
Surplus (Deficit)	41,597	28,391	153,180	145,853	138,267	143,263	164,896	166,565	168,379	170,923	172,257
Exports to PAD II ²	42,596	30,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
Net RM Surplus (Def)	(999)	(1,609)	53,180	45,853	38,267	43,263	64,896	66,565	68,379	70,923	72,257
Surplus or (Deficit) Percent of RM Prod.	0.27%	0.46%	15.98%	14.54%	12.80%	15.25%	24.12%	26.06%	28.19%	30.79%	33.01%

Sources: ¹EAI, ²PIC Estimates, ³DEIS (Does not specifically include new Amoco/Conoco pipeline.)

Table N-4. Crude Oil Price Forecasts (with and without Express)

Region	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Rocky Mountain ¹	15.74	16.19	16.71	17.22	17.72	18.27	18.76	19.23	19.67	20.06	20.47
Avg. Wyoming Price ² Without Express	15.10	15.55	16.07	16.58	17.08	17.63	18.12	18.59	19.03	19.42	19.83
Avg Wyoming Price ² With Express	15.10	15.55	15.72	16.23	16.73	17.28	17.77	18.24	18.68	19.07	19.5
Price Difference	0.00	0.00	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.4

Sources: ¹DOE, ²PIC Estimates

Tax Revenues

A reduction in prices paid for Wyoming sweet crude oil of \$1.00 per barrel would result in a measurable impact on federal, state, and local government revenues in Wyoming. Based on projected 1997 production, State severance taxes would be reduced by about \$1.2 million, State mineral royalties would drop by \$178,000, local ad valorem revenues would be reduced by about \$1.25 million, and Federal mineral royalties would fall by \$1.6 million. The total impact on Wyoming State and local tax revenues would be about \$3.4 million in 1997. The distribution of revenue reductions is presented in Table N-5.

Table N-5. Distribution of Revenue Reductions

Budget Category	1997 Impact
State General Fund	(544,014)
Education	(1,365,079)
Highways	(322,888)
Cities, Towns & Counties	(441,012)
Wyoming Mineral Trust Fund	(444,424)
Other	(287,521)
Totals	(3,404,938)

Source: PIC Estimates

Consumer Gasoline Prices

A reduction of \$1.00 per barrel for sweet crude would represent about a decline of about \$0.35 per barrel for all crude produced in Wyoming. Those refiners using mostly sweet crudes would experience a slight decrease in their input costs. Refiners using mostly sour crude would experience an increase in cost as they continue to supplement declining local production with more expensive Canadian crude. The overall net change for RM refineries would be more likely to increase over the next ten years. It is quite likely most of the increase in the price of crude oil paid by refiners will be passed onto consumers in higher gasoline prices. This can be expected due to the highly inelastic nature of consumer demand for gasoline.

Sensitivities

As RM regional crude production continues to decline, and competition from refined product pipelines becomes more intense, the RM area refineries have been caught in a squeeze. Without development access to additional oil supply, a real potential for closure of refineries in Wyoming exists. If a number of RM refineries were to shut down, RM oil producers might face a situation worse than that predicted above with Express. They would be forced to sell a significant portion of

their production in distant markets with much higher transportation costs. RM producers would be at a competitive disadvantage to producers closer to those markets.

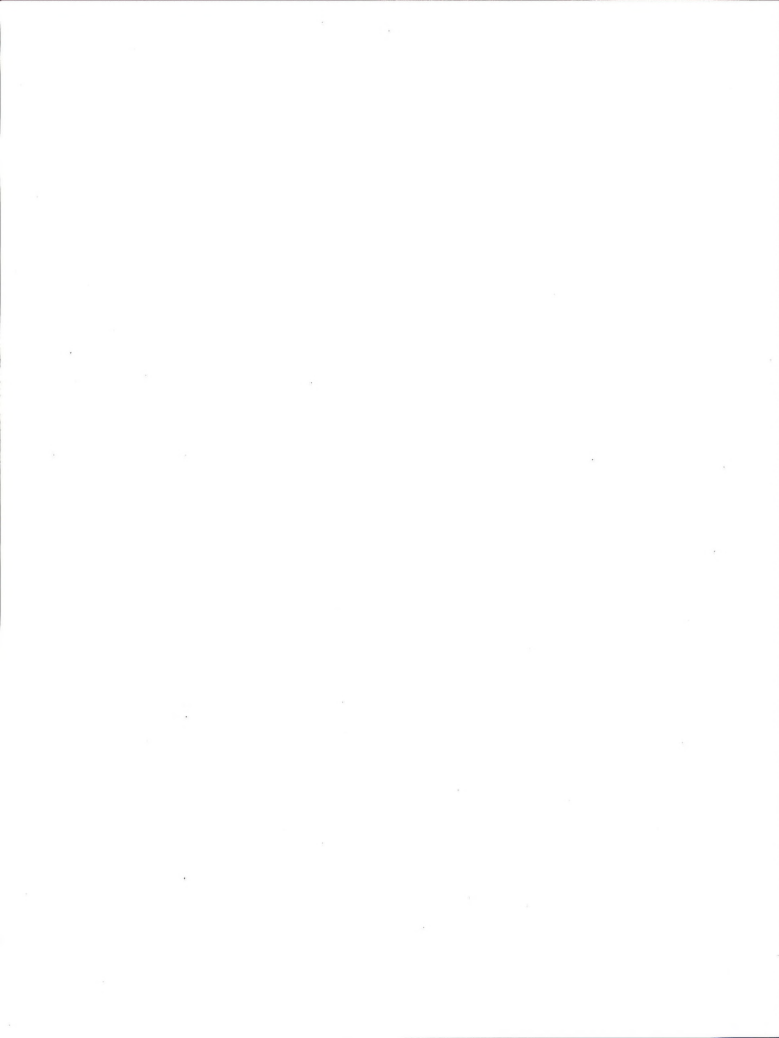
The closure of refineries in Wyoming would have adverse impacts on local and state income and employment which would be especially acute for some local economies. For example, the Frontier Refinery in Cheyenne, Wyoming, employs approximately 261 people. The average wage of the Frontier employees is \$40,377, compared to the average wage of Laramie County is \$22,165 (Ogara 1995). The total annual wages and benefits provided to frontier employees are \$15,400,000 (Fauldel 1995). Frontier pays approximately \$780,000 in annual use and sales taxes.

The regional crude oil supply problem would be substantially improved with Express. It is likely that the Express pipeline would allow the Platte pipeline to remain in operation and continue transporting crude oil to PADD II. This would provide continued access to this market for Wyoming oil. The stable supply of oil provided by Express would also help assure the viability of the RM refineries, the primary market for Wyoming oil.

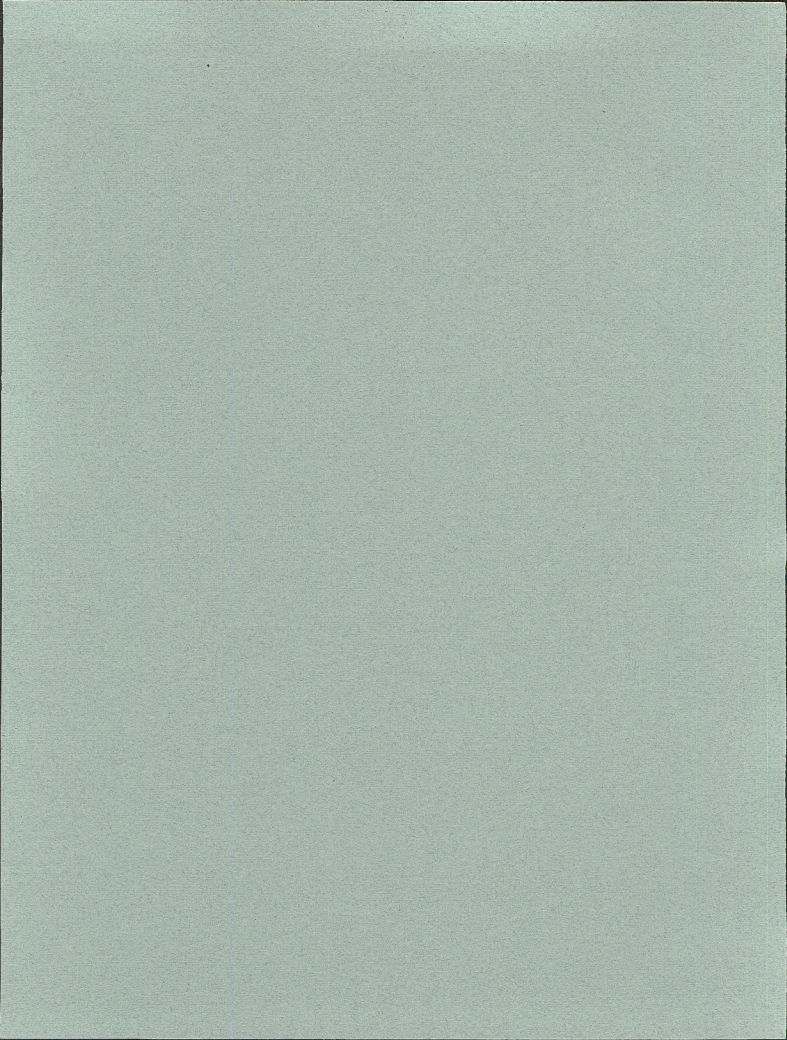
It is expected that existing pipelines could provide sufficient supplies of Canadian oil to satisfy the demand in the RM region through 1997. The economic success of the Express pipeline is dependent on its securing a substantial portion of the existing Canadian crude oil imports to the RM region and transporting significant quantities of oil to the PADD II market. It is certainly possible that projected PADD II demand volumes would not be realized on a consistent basis (DEIS p2-11). Under these circumstances, Express would be totally dependent on the RM refineries. An oversupply of Canadian crude oil in the RM region could cause substantial downward pressure on RM oil prices. A similar situation has occurred in the past when the IPL pipeline was down for repair or expansion and an excess of Canadian oil was available at Hardisty causing posted prices there to fall below Wyoming posted prices. RM refiners may be able to extract discounts on Canadian crude if supplies exceed demand. If the price of Canadian oil was to fall below the Wyoming price for any length of time, the impact on Wyoming oil prices would be greater than indicated above.

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APPENDIX O
MONTANA STREAM CROSSING TECHNIQUES SECTION



STREAM CROSSING TECHNIQUES

In response to concerns expressed in public comment on the Draft Environmental Impact Statement, the agencies have considered impacts that would result from four methods of crossing streams and rivers in Montana. These include the open trench method, pumped or flumed crossings, directionally drilled, and horizontally bored crossings. Each of these techniques is described below. A fifth technique, overhead crossings was not given serious consideration because of potential for higher visual impacts and vandalism which could affect pipe integrity.

Open Trench

Open trench stream crossings involve excavating a trench across the streambed while the stream continues to flow as shown in **Figure O-1**. Excavated material is placed on the stream bank on small streams or piled in the stream channel on larger rivers where the backhoe reach is not adequate to place the spoils on the bank. If the trench, as it approaches the stream crossing, encounters shallow groundwater and begins to slough, the trench would remain temporarily plugged to reduce the amount of silt-laden water entering the stream. The water would then be pumped from the trench to stable well-vegetated areas. Straw bales or silt fences would be used where necessary to prevent this water from flowing back into the trench. Sediment barriers would be constructed where necessary to prevent runoff from disturbed areas from entering the stream. Silt fences would be installed at streambanks or wetland boundaries prior to construction and would be maintained until adjacent upland areas are successfully re-vegetated.

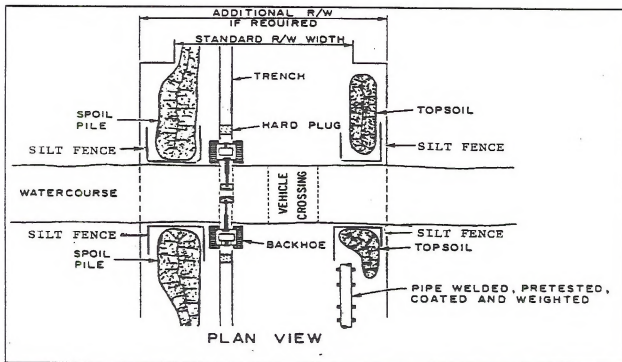


FIGURE O-1. OPEN TRENCH CROSSING

After: Alberta Environment, 1988

The depth at which the pipe should be buried in individual streams ranged from 4 feet to 30 feet and was determined after field study by Dan Nebel with Terracon Western, in Billings, Montana. This burial depth is measured from the lowest point in the stream channel to the top of the pipe. Pipeline

burial continues at that elevation across the active stream channel width and in most cases for a distance beyond the left and right bank. Consequently, the pipe may be buried at great depths adjacent to stream channels to accommodate lateral stream scour which may occur over the life of the project.

Sediment stirred up by the excavation, especially fine sand and silt, would be carried by the water and deposited farther downstream. The distance these fine materials would be transported would depend primarily on stream velocity, with sediments settling more quickly in small, slow moving streams such as the East Fork of Roberts Creek. Less sediment would be stirred up by trenching through bedrock and coarse grained gravels and cobbles. The duration of increased sediment production would range from several hours on small streams to two to four days on larger rivers such as the Yellowstone or Clarks Fork of the Yellowstone.

Dam and Pump or Flumed Crossings

In this technique a temporary dam is built upstream and downstream of the trench. Streamflow is pumped or flumed around the trench in an effort to reduce sediment transport (see **Figures O-2 and O-3**). Although this technique has been referred to as a dry method, trenching still takes place below the water table and a small amount of muddy water would move downstream when the temporary dams and flumes are installed and removed. However, the technique could be modified to reduce the amount of sediment transported downstream when the trench is removed, pumping any muddy water contained in the trench between the dams into silt bags, a settling pond, or well-vegetated upland area.

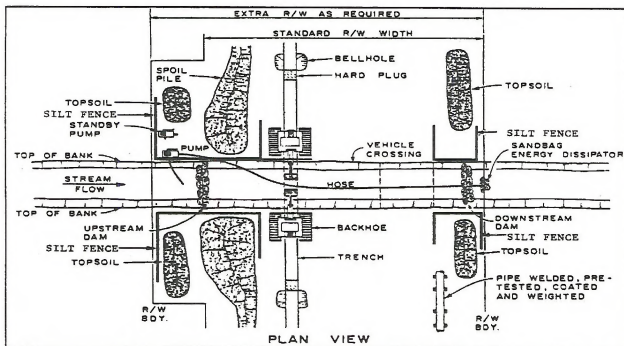


FIGURE O-2. DAM AND PUMP METHOD

After: Alberta Environment, 1988

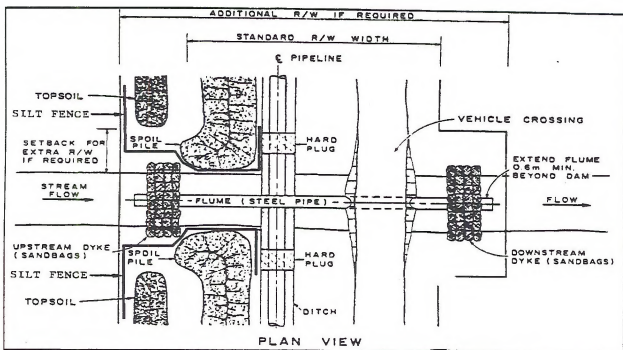


FIGURE 0-3. FLUMED STREAM CROSSING

After: Alberta Environment, 1988

Dam and pumping or fluming is best suited to small to medium sized streams less than 5 feet deep flowing less than roughly 50 cfs. On streams larger than this, the sedimentation impacts associated with placing and removing temporary dams may be as great as those associated with trenching. For these methods to be successful, streambed materials should be non-porous to prevent leakage of water below the temporary dams. The methods are not suitable for use where blasting is necessary or if fish passage is required during the operation. These methods often require one or two additional days of instream work beyond that necessary for open trenching.

Costs would be slightly higher than those associated with open trenching. For a very small stream such as the East Fork of Roberts Creek, which is less than a foot deep and 2 feet wide, the additional cost would be \$8,000 to \$15,000; while for a medium sized stream like the Judith or Musselshell rivers, costs would be \$25,000 to \$50,000 dollars higher (Hellman 1995).

Directionally Drilled Crossings

Directional drilling is described on page 2-40 of the Draft EIS. It is well suited to situations where non-fractured bedrock is found beneath the stream channel. As shown in Figure O-4, a drill rig mounted on a semi truck is used to drill a hole in a continuous arc below the stream channel. Drilling mud, composed of bentonite clay and water, is used to remove cuttings as the hole is opened. After a hole is initially drilled, it must remain open until it is reamed large enough for the pipe to be pulled through the hole. Pressure exerted by drilling mud will help hold the hole open while it is being reamed. If large cobbles, unconsolidated gravel or sand are encountered, or if fractured bedrock is crossed, the hole may collapse before the pipe can be pulled. If a hole collapses, there is a chance that drilling mud would be discharged to the stream channel. Large cobbles also may divert the drill bit.

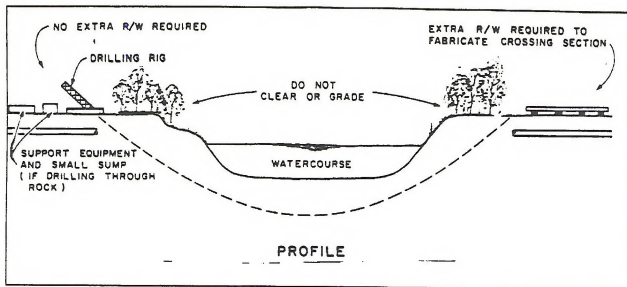


FIGURE O-4. DIRECTIONAL DRILLING A STREAM

After: Alberta Environment, 1988

Assuming that drilling mud is not discharged to a stream, directional drilling would result in the lowest impact to water quality, channel integrity, and aquatic habitat. However, it is usually the most costly method as shown in Table O-1 and does result in slightly more land disturbance where the drill rig is set up and pipe is pulled. This area for setup and pulling is located away from the stream banks and does not result in stream bank disturbance. In fact, the Corps of Engineers has indicated a 404 permit would not be required at the Missouri River if it is directionally drilled.

Table O-1
Cost Difference Between Directional Drilled and Open Trench Stream Crossing

<u>STREAM</u>	<u>DIFFERENCE IN COSTS</u>
Yellowstone River	\$ 1,041,000
Clarks Fork	\$ 650,000
Rock Creek	\$ 630,000
Judith River	\$ 845,000
Arrow Creek	\$ 185,000
Milk River	\$ 730,000 ^a
Shoshone River	\$ 695,000
Greybull River	\$ 840,000
Big Horn River	\$ 575,000

Source: Hellman 1995

^a Costs associated with a directionally drilled crossing of the Milk River are \$730,000 less than for open trenching.

Horizontal Boring

On page 2-41 of the Draft EIS, horizontally bored crossings are described as a method of crossing roads, utilities, railroads, and irrigation canals, but can also be used as a stream crossing method (**Figure O-5**). Horizontal boring involves digging a large bell hole on both sides of the crossing below the depth of stream scour (see **Table 11** in the Draft EIS and following site-specific discussions) and augering a horizontal hole under the ground without damaging the streambed. A section of pipe is then inserted and welded to the pipeline on each side of the crossing. It differs from directionally drilled crossings in that a bell hole is required on each side of a stream, the pipe is lowered into the bell hole and pushed horizontally rather than starting the pipe from the surface and pulling it through in a continuous arc and on long, deep crossings the amount of surface disturbance may be greater. Depending on the depth and width of the stream crossings, the horizontal boring method may result in a greater surface disturbance on upland areas on either side of the stream channel than a directionally drilled crossing.

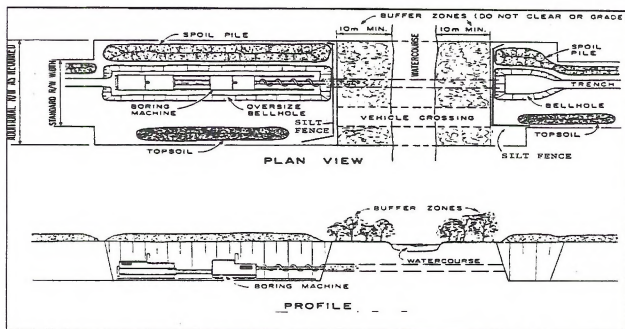


FIGURE O-5. HORIZONTAL BORING METHOD

After: Alberta Environment, 1988

Typically, shallow groundwater would be encountered as the horizontal drilling proceeds. In fine grained sediments, pumping and disposal of a small amount of groundwater would not be difficult. If large amounts of groundwater have to be removed as a result of working below the water table in coarse grained alluvium, then preventing this sediment-laden water from discharging into a stream becomes more problematic. Settling ponds and silt bags might be employed to reduce sediment discharge. In general, Express believes that directionally drilled crossings serve the same purposes as horizontal boring with fewer impacts.

RESULTS OF ON-SITE INSPECTIONS

Since publication of the Draft EIS the MDEQ has inspected Express' proposed crossing sites on perennial streams, those with designated floodplains, intermittent streams with fish species of special concern, and other streams of concern within Montana. Results of these inspections and DEQ's recommendations are presented in the following discussion. Unless otherwise indicated, construction would take place at these stream crossings between August 1 and November 15.

Milk River

The Milk River has formed a broad valley approximately 3,000 feet wide incised about 180 feet below the surrounding plains. The 100-year floodplain width is approximately 2,000 feet and the active channel width is about 500 feet and incised 4 to 6 feet below the valley floor. The Milk River is a designated 100-year floodplain according to National Flood Insurance Program maps. Initial scour depth calculations indicated that the pipe would have to be buried to a depth of 44 feet to meet floodplain requirements (Nebel 1995).

Riparian forest is largely absent in the Milk River valley. The portion of the Milk River in the vicinity of the proposed crossing supports 21 mostly warm water fish species including a few northern pike, walleye, very few rainbow trout, lake whitefish, yellow perch, burbot and sauger; and a variety of minnow species.

Following BOR and BLM approval, Express conducted a limited drilling program on the south side of the Milk river along the centerline of the proposed pipeline route in October 1995. The purpose of the drilling program was to establish the depth and nature of the valley fill and underlying bedrock. All three of the borings encountered soft, saturated sand, silt and clay that extends to depths of 46 feet or greater. Immediately adjacent to the river the valley fill extends to depths greater than 60 feet. The fine grained bed material is highly susceptible to scour and the absence of a coarse gravel or bedrock layer might result in deep scour during extreme flow events.

A revised scour depth calculation based on the site specific drilling information indicates that the pipe should be buried 30 feet (Nebel, personal communication to Saul, Nov. 1995). The hole can probably be directionally drilled; a water jet or stream of high pressure water may be used instead of a drill bit. An open-cut trench would be very large and difficult considering the instability of the material expected in the excavations. An excavation to below the required burial depth would require either dewatering and shoring with sheet piling or similar methods or an extremely wide trench. Directional drilling is estimated to be less expensive than an open trench crossing on the Milk River (see **Table O-1**).

Based on the above information, Express proposes and DEQ recommends to cross the Milk River using directional drilling technology. As indicated in **Table O-1**, a directionally drilled crossing would cost approximately \$730,000 less than open cut trenching. If three separate attempts at directional drilling fail, then DEQ would recommend that Express be allowed to proceed with an open trench crossing and that DEQ be given authority to work with affected state and federal agencies to permit the trenched crossing. DEQ recommends that construction traffic use existing

bridges to move around the crossing. DEQ further recommends that block and check valves be installed in the pipeline at the crossing to minimize environmental damage and product loss in the event of a rupture.

Ninemile Coulee

Ninemile Coulee is a grassy swale which was not flowing when the area was visited in October. This coulee is a designated floodway/floodplain in Hill County; it is an intermittent stream according to USGS maps. Streamside vegetation consists of sedges with no trees or shrubs present. No fish are present near the proposed crossing. Ninemile Coulee has a drainage area of about 62 square miles and a 13 foot-wide active stream channel. It drains to an arm of Fresno Reservoir and is ungaged. However, the Hill County floodplain manager reported that the area experiences infrequent, but extreme rainfall events (5 inches in about 2 hours was reported several years ago within a few miles of the crossing location). In the past, these events have caused small stock pond dam breaks in this drainage exposing the stream channel to erosion. A reservoir of approximately 40 acres is located roughly 1 mile upstream from the crossing location.

Express proposes to open trench this crossing and provide 6 feet of cover between the bottom of the stream channel and the top of the pipe for the 13-foot active channel length. Silt fences would be installed at streambank or wetland boundaries prior to construction and would remain until adjacent uplands are satisfactorily re-vegetated. Disturbed areas would be reseeded with a mix of western wheatgrass and needle-and-thread; wetland areas would not be reseeded but would rely on propagules in re-spread topsoil. Disturbed areas would be fenced to promote re-vegetation if grazing cannot be deferred.

DEQ concurs with Express's proposal of a 6-foot burial depth and open trench construction for the crossing. DEQ does not believe that alternative crossing techniques are warranted at this crossing because of the limited aquatic resources present. If flowing water is present, then DEQ recommends that a temporary bridge or culvert be installed to prevent sediment production from vehicle fording during the construction and reclamation periods. The bridge or culvert would be large enough to accommodate a 10-20 year flood and would be removed at the end of reclamation.

Sage Creek

Sage Creek is a designated floodway/floodplain in Hill County and is an intermittent stream according to USGS maps. The stream was not flowing during DEQ's October field visit, but DEQ staff did observe ponded water standing in some of the deeper holes. The stream has a 4-foot wide active channel and lacks woody vegetation. Express's consultant assumed a 3-foot scour depth. DFWP classifies the stream as Class IV, meaning it has a limited fishery.

The floodplain is about 500 feet wide and drains an area greater than 650 square miles of mainly semiarid range and dryland agriculture in Hill and Liberty counties. The ungaged stream flow is perennial in some places and intermittent in others. Numerous small instream stock ponds are located on Sage Creek. The area sometimes experiences extreme rainfall events. These events have caused small stock pond dam breaks in the past, exposing the stream channel to erosion.

Express proposes to open trench this crossing and provide 6 feet of cover between the bottom of the stream channel and the top of the pipe. This is twice the scour depth, as required by floodplain

regulations. This burial depth would continue across the active channel and area of concern for potential lateral channel migration, including 19 feet of active channel, 70 feet beyond the left bank and 25 feet beyond the right bank, for a total 6 foot burial for 114 feet. Silt fences would be installed at streambank or wetland boundaries prior to construction and would remain in place until adjacent uplands are satisfactorily re-vegetated. Disturbed areas would be reseeded with a mix of western wheatgrass and needle-and-thread grass; wetland areas would not be reseeded but would rely on propagules in re-spread topsoil. If grazing cannot be deferred, a fence would be installed to promote re-vegetation.

DEQ concurs with Express's proposed crossing method. DEQ staff do not believe that alternative crossing methods are warranted at this crossing because of the limited aquatic resources present. If flowing water is present then DEQ recommends that a temporary bridge or culvert be installed to prevent sediment production from vehicle fording during the construction and reclamation periods. The bridge or culvert should be large enough to accommodate a 10-20 year flood and should be removed at the end of reclamation.

Missouri River

The crossing of the Missouri River is located about one mile below the Virgelle Ferry and 3/4 mile above Coal Banks Landing, a major recreational access point for the Wild and Scenic portion of the Missouri River. The Missouri River is about 700 feet wide at the proposed crossing with flow in the summer ranging from 18,008 cfs in June to 6,000 cfs in September. The reach near the crossing is classified by DFWP as a Class I, outstanding fisheries resource, and supports 31 fish species. Habitat for the pallid sturgeon, listed by USFWS as an endangered species, is present as is spawning habitat for paddlefish. USFWS lists paddlefish as a C2 species, meaning current information indicates proposing to list as endangered or threatened is possibly appropriate but substantial biological information is not on file to support an immediate ruling (NRIS 1995).

Express proposes to directionally drill the Missouri River crossing. This could take about two weeks to complete. Drilling will not disturb the stream bed or stream banks. Geologic investigations conducted by Express's consultants indicate that a directionally drilled crossing should be successful. Crossing vehicles will have to travel along and across the river on existing roads and bridges. Smaller construction vehicles may be able to use the Virgelle Ferry.

Block and check valves would be installed on the pipe on either side of the river. A streambank reclamation plan has not been developed because it would not be required for directional drilling, the probable method of crossing.

DEQ recommends that the crossing of the Missouri River be directionally drilled. If three separate attempts to directionally drill this crossing fail then DEQ recommends that Express be allowed to pursue using the open trench method. If open trenching is necessary, DEQ requests authority to work further with local, state and federal agencies to place conditions on the timing of construction, to require methods to further reduce sediment production, and to require an approved reclamation plan at the Missouri River crossing. A separate 404 permit would be required for open trenching and would require a separate biological assessment. This process may take three months or more. DEQ recommends further that if the pipeline crossing is open trenched Express should consult with BLM and post warnings of instream construction activities for river floaters at points approximately above the Virgelle Ferry, at the Virgelle Ferry, and at upstream floater access points. Express

should be required to publish notice of such activities in local papers for two weeks prior to construction. Open trenching could remove or disturb a narrow 190 foot strip of riparian vegetation on the northwest bank. Sediment production would be expected as the trench is excavated. The pipeline would be buried to a depth of five feet below the bottom of the stream channel. DEQ recommends that Express consult with BLM regarding required operation of a shuttle for floaters between the Virgelle Ferry and Coal Banks Landing while instream construction activities are in progress.

Flat Creek

Flat Creek is a small intermittent stream located in a very wide channel formerly occupied by the Missouri River during glacial times. At the crossing site, Flat Creek was about 6 feet wide and less than one foot deep when viewed in September. Saline seeps are evident on both sides of the stream and no trees are present. No fish are found at the crossing site.

Express proposes to open trench this crossing and bury the pipe with 5 feet of cover over a 119-foot length, including 7 feet of active channel, 25 feet beyond the left bank and 87 feet beyond the right bank, and install a temporary vehicle crossing. Spoils would be stored on the streambanks during construction. If necessary, the trench could be dewatered to control the flow of water and to prevent trench sloughing. Sediment laden water from dewatering would be discharged onto well-vegetated upland areas or contained behind silt fences. It is anticipated that construction activities would take a day or less. The streambanks would be returned to approximate original conditions and revegetated according to landowner wishes or reseeded with western wheatgrass.

Because of the limited aquatic resources present in this stream DEQ concurs that open trenching is an appropriate construction method.

Arrow Creek

Arrow Creek is a perennial stream which occupies a large broad valley occupied by the Missouri River during glacial times. The active channel of Arrow Creek exhibits a tortuous meander pattern with oxbows and cutoff channels common across the entire 2,800 foot width of the valley floor. "Based on evidence in the field and from conversations with SCS personnel, it is not uncommon for Arrow Creek to experience drastic channel change on an annual basis" (HKM April 1992.)

The active channel of Arrow Creek is incised about 10 feet below the valley floor and varies in width from location to location depending upon recent lateral movement. In the area of the crossing, the active channel is 40 feet wide with a vertical bank on the west side and sloping bank on the east side.

The bed of Arrow Creek is formed of clayey sand with gravel (estimated median bed size 2.0 mm.) The banks are formed of silt and sand. Vegetation consists of willows, scattered sage brush, and grass with occasional cottonwood. No bedrock is present in the stream bed and considering the geologic history of the valley, the alluvial material may extend to great depth.

Scour Investigations

An HKM (April 1992) investigation of scour analysis for the Altamont Pipeline reported the following:

"Arrow Creek is geomorphically unstable at this location. Numerous recent cutoffs and meander scars occupy the valley floor. At this location burial at maximum depth is recommended across the entire width of the valley floor or about 2,800 feet. From a geomorphic standpoint, a more stable alternative would be to cross Arrow Creek upstream of Cowboy Creek. However, this would require a considerable realignment and even above Cowboy Creek, Arrow Creek is still deeply incised and laterally active. Another alternative would be to cross Arrow Creek about 2000 feet downstream where Arrow Creek is somewhat confined. Here burial at maximum depth would be required for about 1600 feet."

The bed scour analysis performed by HKM (April 1992) resulted in a range of potential bed scour from 9 to 51 feet deep for a 100-year flood event. Because of the wide range of scour depth estimates, two auger holes to 39 feet deep were drilled to determine the nature of the soil profile near the crossing location (HKM December 1992). In both borings, clayey soil which would impede scour were encountered with depth. Due to the cohesive nature of the bed materials, scour depth calculations were revised downward.

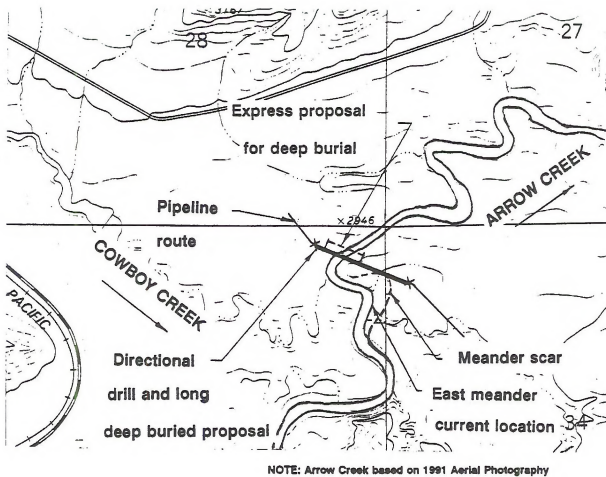
Express Proposal

Express proposes to open trench the Arrow Creek crossing adjacent to the Altamont location. Express has proposed a burial depth of eight feet below the lowest point in the stream channel and that the eight foot minimum burial depth be maintained for 500 feet. If shallow groundwater is encountered, excavation to this depth without shoring could result in a very wide trench. Spoils would be stored on the streambanks during construction. The trench would be dewatered if necessary to control the flow of water and to prevent trench sloughing. Sediment laden water from dewatering would be discharged onto well vegetated upland areas or contained behind silt fences.

Considerations

On the east side of the stream crossing, a tall vertical bank from an old stream meander extends about 300 feet beyond the area originally proposed for deep burial (Figure 0-6.) A meander scar seen in aerial photos reveals that the stream at one point was about 50 feet from laterally intersecting the proposed pipeline route. The meander is currently located about 200 feet laterally upstream from the pipeline route.

Downstream progression of meanders occur as a result of stream undercutting and collapse of stream banks. Active migration of the Arrow Creek channel could expose the pipeline if it is not buried to a sufficient depth. Deep burial using an open trench beyond this meander in this area would result in the need to remove as much as 35 feet of overburden causing large surface disturbance and impacts. This meander has moved very little since the first air photos were taken in this area in 1951. However, the meander pattern both upstream and downstream of the crossing location suggests that channel movement may take place over the life of the pipeline and expose the pipe. Express proposes to mitigate for possible channel movement with annual inspections and



Approximate Scale

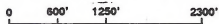


FIGURE 0-6 ARROW CREEK PROPOSED CROSSINGS

reburial at greater depth when necessary. Reburial would result in additional surface impacts and prolong the time for establishment of permanent vegetation.

Options

Express has proposed to cross the Arrow Creek area with 500 feet of deep burial (8 feet) and 760 feet of shallow burial (3 feet). This option would not protect the pipe from possible exposure caused by the downstream progression of the meander and may result in reburial and associated surface disturbance if the pipe would need to be protected from the migrating meander at a later date.

Another option is to continue deep burial (8 feet below the lowest point of the stream channel) across the meander area for a total length of 1260 feet. The cost for this option could range from one and a half to two times or more the cost of Express's proposal depending upon the depth of groundwater in the open trench and the amount of shoring necessary to keep the deep trench open for pipe installation. This would protect the pipe from the meander in question, however this option would result in significant surface disturbance.

A third option is to directionally drill this crossing for the entire 1,260 foot length. This option would cost approximately twice the cost of Express's proposal. Directionally drilling would protect the pipeline from possible exposure from the meander in question and would result in relatively little ground disturbance.

DEQ Recommendation

Based on the above information, the DEQ field inspection, and the 1992 field work and scour analysis report, DEQ recommends that the Arrow Creek crossing be directionally drilled. A burial depth of at least 8 feet below the bottom of the stream channel should be maintained for a distance of at least 1,260 feet and extend 100 feet east of the meander scar indicated on Figure O-6. DEQ believes that the long-term benefits of less ground disturbance, greater burial depth beyond the eastern meander, and protection provided against possible pipeline exposure from lateral stream migration is the most suitable balance between costs and minimum impacts. Block and check valves should be installed on either side of this crossing to limit the size of a spill in the event of a leak.

Wolf Creek

Wolf Creek is a meandering prairie stream with no riparian trees along its grass-covered banks. At the crossing site the active channel of Wolf Creek is about 18 feet wide and 4 to 5 feet deep. The stream flows during early summer but dries up and consists of widely spaced pools by late summer. DEQ found flowing water several miles upstream and downstream in late summer. Rainbow trout are found in the stream but their range probably is restricted to portions of the creek with flowing water in late summer.

Express proposes to open-trench this crossing. The pipe would be buried 5 feet below the bottom of the stream channel to prevent it from being exposed during high flow. This burial depth would extend for 148 feet across the 100-year floodplain. The trench on either side of the stream would be dewatered temporarily if necessary to control water flow and trench sloughing. Excess water would be discharged to well-vegetated upland areas surrounded by silt fence or other sediment barrier. Other possible sediment control measures are described in Appendix B of the Draft EIS.

If necessary a sediment barrier would be retained as long as possible to prevent saturated spoils from flowing back into the trench. The stream channel would be returned to approximate original contours within about 24 hours. Unless otherwise specified by the landowner, the disturbed area would be reseeded with a mix of smooth brome, western wheatgrass, and slender wheatgrass. Silt fences installed at streambank or wetland boundaries prior to construction would be maintained until adjacent upland areas are successfully re-vegetated.

DEQ concurs with Express's plan to open trench this crossing. Aquatic resources at this site do not justify the additional costs of a directionally drilled or horizontally bored crossing.

Sage Creek

Sage Creek is a small, perennial, gravel-bottomed prairie stream. Its banks are grass and shrub covered with no trees present. Brook trout are thought to be common, especially in the upper reaches of the stream. At the crossing site the active stream channel is about 33 feet wide but by late summer the stream itself is 2 to 4 feet wide and 1 to 2 feet deep.

Express proposes to open trench this crossing. The pipeline would be buried 5 feet below the bottom of the stream channel for a distance of 533 feet including the active channel width and 500 feet beyond the left bank. If bedrock is encountered, the pipeline would be placed at least 1 foot below the top of the bedrock. Except for the likely presence of bedrock, construction methods are expected to be the same as those for Wolf Creek. The disturbed area would be reseeded with a mixture of western wheatgrass, redbud, western snowberry, and woods rose unless otherwise specified by the landowner. The crossing would take a day or two to complete. Silt fences installed at streambank or wetland boundaries prior to construction would be maintained until adjacent upland areas are successfully re-vegetated.

After consultation with other agencies DEQ recommends that Sage Creek be crossed with dam and pump or flumed crossing methods to reduce sediment production. Construction traffic should cross the stream on a temporary bridge or culvert.

DEQ does not believe the aquatic resources at this site justify the cost of directionally drilled or a horizontally bored crossing.

Louse Creek

Louse Creek is a small perennial prairie stream that supports brook trout in its upper reaches. The creek originates from springs near the Agricultural Research Center about 5 to 6 miles upstream from the crossing. At the crossing site the stream was about 4 to 5 feet wide and less than 1 foot deep when the on-site inspection took place in September. The active stream channel is 8 feet wide. Streambanks slope gradually upward from the stream channel. No trees are present.

Express proposes to open trench this crossing. Construction would be similar to that described for Wolf Creek except that the pipeline would be buried 4 feet deep over a distance of 70 feet. Unless otherwise requested by the landowner, revegetation would rely on propagules from re-spread topsoil instead of reseeding. The crossing is likely to be completed in a day or less. Silt fences installed at streambank or wetland boundaries prior to construction would be maintained until adjacent upland areas are successfully re-vegetated.

After consultation with other agencies DEQ recommends that Louse Creek be crossed with dam and pump or flumed crossing methods to minimize sediment production. Construction traffic should cross the stream on a temporary bridge or culvert. Aquatic resources do not justify the cost of directionally drilled or horizontally bored crossings.

Judith River

Judith River at the crossing site is a moderate sized perennial stream. When surveyed in early summer the river was about 60 feet wide and the active channel is 70 feet wide. In September the river was about 20 feet wide and less than 4 feet deep. DEQ staff estimated the flow to be about 20-30 cfs. The river supports rainbow and brown trout. Habitat suitable for trout spawning is present. Streamside vegetation consists of grasses and shrubs with a considerable amount of the noxious weed leafy spurge. A few mature cottonwoods are present on the west bank. Streambed materials are gravels and cobbles over shallow bedrock.

Express proposes to open trench the Judith River. The pipe would be buried 5 feet below the bottom of the stream channel except where bedrock is encountered, in which case the pipe would be buried at least 1 foot below the top of bedrock. Total length of pipe buried 5 feet below the lowest point of the stream channel would be 300 feet. A dragline or two backhoes would be used for construction, one on each bank, and spoils would be temporarily placed on shore. Sediment laden runoff from work areas would be contained by straw bales or silt fence. Woody vegetation within the work area would be cut at ground level, and where it would not affect the pipeline it would be allowed to re-sprout. Silt fence along the streambank would be left in place until the area is successfully re-vegetated. The area would be reseeded with redtop unless otherwise specified by the landowner and would be fenced with a four-strand barbwire fence unless grazing in the adjacent area could be deferred. Silt fences installed at streambank or wetland boundaries prior to construction would be maintained until adjacent upland areas are successfully re-vegetated.

In order to avoid excess sediment transport, DEQ recommends that the river be diverted around this crossing during construction unless flow is greater than 50 cfs. If streamflow exceeds 50 cfs then the crossing should be constructed between August 1 and September 15 to avoid trout spawning. In order to minimize the chance of a spill, block and check valves should be placed on either side of the stream outside the floodplain. Construction traffic should use existing bridges to move equipment around the crossing.

Hauck Coulee

Hauck Coulee is a perennial meandering prairie stream with no woody vegetation along its banks. The active stream channel is 32 feet wide. When visited in October the stream was about 8 feet wide and less than 2 feet deep. Hauck Coulee provides habitat for the northern redbelly and finescale dace hybrid which is listed by DFWP as a species of special concern in Montana. The landowner has installed a culvert just upstream from the proposed crossing.

Express is revising its proposal for an open trench crossing of Hauck Coulee to be a dam and pumped or flumed crossing because of the presence of habitat for a fish species of special concern. Construction traffic would use the existing culvert crossing though the crossing might have to be upgraded to handle larger construction traffic. The trench would be dewatered if necessary to control the flow of water and to prevent trench sloughing. Sediment laden water from dewatering

would be discharged onto well vegetated upland areas or contained behind silt fences. Following construction the upland areas would be seeded with a mix of western wheatgrass and timothy while the area immediately adjacent to the stream would rely on propagules for re-vegetation. It is anticipated this crossing would be completed in less than two days. Silt fences installed at the streambank or wetland boundaries prior to construction would be maintained until adjacent upland areas are successfully re-vegetated.

DEQ recommends Express's revised plan for a dam and pump or flumed crossing.

Big Coulee Creek

Big Coulee Creek is a fairly narrow, deep spring-fed stream with no trees present at the crossing. Abundant aquatic vegetation grows in the stream which supports the northern redbelly and finescale dace hybrid, a species of special concern in Montana. The active stream channel is about 17 feet wide at the crossing but when inspected in September, the stream was estimated to be 4 to 5 feet wide and 3 to 4 feet deep.

Express is revising its proposal for an open trench crossing of Big Coulee Creek to be a dam and pump or flumed crossing because of the presence of habitat for a fish species of special concern. Construction traffic would cross the stream using a temporary bridge or through the dewatered portion of the stream channel. The pipeline would be buried 4 feet below the bottom of the stream channel. The trench would be dewatered if necessary to control the flow of water and to prevent trench sloughing. Sediment-laden water from dewatering would be discharged onto well vegetated upland areas or contained behind silt fences. Propagules contained in salvaged topsoil would be relied upon for revegetation. Upland areas between wheat fields would be reseeded with smooth brome unless otherwise specified by the landowner.

DEQ concurs with Express's revised proposal for a dam and pump or flumed crossing.

Ross Fork Creek (milepost 153.7)

Ross Fork Creek is a perennial stream that originates in the Big Snowy Mountains and flows through pastures and cultivated land from near Judith Gap to its confluence with the Judith River. The proposed pipeline route parallels the creek and as originally proposed would cross it four times. Little woody vegetation is present at all crossings; banks are grass and shrub covered for the most part.

At milepost 153.7, Ross Fork Creek consists of a large pool over a 1/4 mile long. The active stream channel is 39 feet wide. When the area was visited in September the pool was about 4 feet deep. A short distance below the crossing the stream narrows to about 10 feet wide and less than a foot deep in a riffle area. Ross Fork Creek supports brown trout and a few brook trout and associated nongame fish.

Express proposes to open trench this crossing and bury the pipeline 4 feet below the streambed. The trench as it approaches the stream crossing would be dewatered if necessary to control the flow of water and to prevent trench sloughing. Sediment laden water from dewatering would be discharged onto well-vegetated upland areas or contained behind silt fences. In wetland areas propagules from salvaged topsoil would be relied upon for re-vegetation unless otherwise specified by the landowner,

and upland areas would be reseeded with snowberry. Smooth brome would be allowed to re-invade the area. Streambanks would be fenced unless grazing could be deferred. Silt fences installed at streambank or wetland boundaries prior to construction would be maintained until adjacent upland areas are successfully re-vegetated.

DEQ would prefer to see this crossing constructed with the dam and pump or flume method if this could be accomplished without dewatering the entire pool. Vehicles should cross the stream on the dams or on a temporary bridge. If this is not possible then the crossing should be open trenched, completed before September 15, and vehicle traffic routed over an off right-of-way ford in the downstream riffle or over a temporary bridge. If a ford is used it should be lined with steel matting to reduce streambed damage.

East Buffalo Creek

East Buffalo Creek is a small perennial tributary of Ross Fork Creek. The active channel is 27 feet wide, however, when field inspected in September it was less than 3 feet wide and a foot deep. It may support a few nongame fish but is not valued as a sport fishery. The proposed crossing is in a pasture near a former hog operation. The landowner has expressed concern that the pipeline is located too close to a well.

Express proposes to open trench this crossing. The pipeline would be buried four feet below the bottom of the stream. The trench would be dewatered if necessary to control the flow of water and to prevent trench sloughing. Sediment-laden water from dewatering would be discharged onto well-vegetated upland areas or contained behind silt fences. The disturbed area would be reseeded with smooth brome unless otherwise specified by the landowner. Silt fences installed at streambank or wetland boundaries prior to construction would be maintained until adjacent upland areas are successfully re-vegetated.

Because of the pipeline's close proximity to a well and spring owned by Mr. Whichman, the inspection team suggested that the pipeline be moved about 150 to 250 feet to the east. Land use in this area is pasture with a spring and pond present. The realignment would locate the pipeline just east of the pond. Moving to the west would put the pipeline among several buildings in a former hog farming setup and therefore was not seen as a viable option. The pipeline would still be buried at least 4 feet below the streambed at this new crossing.

DEQ recommends that the pipeline be rerouted east of the pond in order to avoid the well and pond and DEQ further recommends that the crossing be accomplished using the open cut method because the aquatic values are not high at this location. A temporary culvert or steel matting should be used to protect the stream bottom from unnecessary damage if a construction vehicle ford is needed. If grazing cannot be deferred, streambanks should be fenced until re-vegetation is complete.

Dry Creek

Dry Creek is a very small perennial tributary of Ross Fork Creek. It is unlikely to support a fishery. The banks are grass covered. The active stream channel is about 3 feet wide and was nearly dry when visited in late summer.

Express proposes to open trench the Dry Creek crossing. The pipeline would be buried 4 feet below the bottom of the stream channel and disturbed areas would be reseeded with smooth brome unless otherwise specified by the landowner. Sediment control would be similar to that proposed for Ross Fork Creek. The crossing would be completed in less than a day.

DEQ concurs with Express's proposed crossing methods. If flowing water is present, a temporary culvert should be installed for construction traffic or steel matting used on a ford.

Meadow Creek

Meadow Creek is another small perennial tributary of Ross Fork Creek. The channel at the crossing site is choked with cattails. It is not believed to support a fishery and although it is shown as a perennial stream on USGS topographic maps, its flow is reduced to almost nothing in late summer.

Express proposes to open trench this crossing and rely on cattail propagules to re-vegetate wetland areas. Upland areas would be reseeded with smooth brome unless the landowner specifies differently. The trench approaching the stream crossing would be dewatered if necessary to control the flow of water and to prevent trench sloughing. Sediment laden water from dewatering would be discharged onto well-vegetated upland areas or contained behind silt fences. The crossing is expected to take less than a day. Silt fences installed at streambank or wetland boundaries prior to construction would be maintained until adjacent upland areas are successfully re-vegetated.

DEQ concurs with Express's proposal at this crossing, but if flowing water is present a temporary culvert should be installed for construction traffic or a steel mat used on a ford.

Ross Fork Creek (mile posts 163.6 and 163.7)

These two crossings are located on a meander of Ross Fork Creek. The fishery in this area is limited. Express proposes to open trench these crossings and bury the pipeline four feet below the bottom of the stream channel. Construction methods would be similar to those described for Meadow Creek.

Rerouting the pipeline about 80 to 90 feet east to a route adjacent to Montana Power Company's Judith Gap to Glengary 100-kV transmission line would eliminate two crossings of Ross Fork creek. DEQ recommends that the pipeline should be moved to the east to eliminate these crossings of Ross Fork Creek unless it is documented in writing that restrictions imposed by Montana Power Company's easements make such an adjustment unworkable.

If the move is not feasible, then DEQ recommends that the open trench method be used prior to September 15. After September 15, the dam and pump or dam and flume methods should be used. Construction traffic should be routed around the meander rather than through the stream.

Ross Fork Creek (mile post 164.5)

At this proposed crossing Ross Fork Creek is a small stream. The active stream channel is nearly 30 feet wide, but the stream is subject to severe summer dewatering. The stream was dry when DEQ inspected it in September. A few small brook trout will use the available habitat when water is present. Streambanks are grass covered with no trees.

Express proposes to open trench this crossing. The pipeline would be buried 4 feet below the stream channel. Wetland areas would be allowed to re-vegetate naturally from propagules in salvaged topsoil. Upland areas would be reseeded in line with landowner wishes. Leafy spurge is present in the area and immediate re-vegetation of the right-of-way will be needed to prevent the spread of spurge. Construction should be completed in less than a day. Silt fences installed at streambank or wetland boundaries prior to construction would be maintained until adjacent upland areas are successfully re-vegetated.

DEQ believes that the open trench method is appropriate if accomplished before September 15. If water is present after September 15 then the crossing should be accomplished using dam and pump or flume method. Vehicle crossings should use a bridge or a downstream ford covered with steel matting.

East Fork Roberts Creek

The East Fork of Roberts Creek is a small perennial meandering prairie stream which originates from springs. The streambanks are grassy with a few sedges. It is believed to contain brook trout habitat. The stream was up to 2 or 3 feet wide and less than a foot deep when visited in September.

Express originally planned to route the pipeline through a series of four meanders, including five stream crossings in about 300 feet, but has since moved its route about 90 feet to the west. This modification results in the creek being crossed only once. The pipeline would be buried 4 feet below the stream channel and the streambanks would be reseeded with a mix of western wheatgrass, tufted hairgrass, and, if available, Baltic rush. Erosion and sediment control practices would be as described for Ross Fork Creek. Construction is expected to take less than a day.

DEQ concurs with the proposed reroute in this area. Open trenching should not significantly affect the fishery if completed in less than a day. Construction vehicles should cross the area on a small bridge or culvert.

Roberts Creek

The channel of Roberts Creek is completely grass covered at the crossing site and no flowing water was present in September.

Express proposes to open trench the crossing using the same methods described for Ross Fork Creek. DEQ feels this method is appropriate at this crossing as the aquatic resources are extremely limited. If flowing water happens to be present, DEQ would then recommend that vehicles cross the creek over a ford protected with a steel matting.

Musselshell River

The Express pipeline would cross the Musselshell River near the town of Shawmut. A county road bridge is located about 3,000 feet below the proposed crossing. Vegetation consists of grasses and shrubs on the north bank and cottonwood riparian forest on the south bank. The river is considered a Class III or substantial fishery by DFWP and supports low numbers of whitefish, rainbow, and brown trout. The river's active channel is about 70 feet wide at the crossing but by August and September it is not uncommon to find this portion of the river nearly dry due to irrigation use and

DNRC's diversion of water to Deadman's Basin Reservoir. When the site was visited in September the river was about 20 to 30 feet wide.

Express proposes to open trench the Musselshell River crossing and bury the pipeline 5 feet below the minimum stream channel elevation. The deep burial would extend 240 feet beyond the right bank and 200 feet beyond the left bank for a total length of 500 feet. Vehicles would use the existing county road bridge to move across the river. About 0.5 acres of riparian forest would be cut on the south bank. Trees which would interfere with installation but would not interfere with operation of the pipeline would be cut at ground level and the stump and root system left in place. Willow cuttings would be planted on streambanks and upland areas seeded to landowner specifications. The trench as it approached the stream channel would be dewatered if necessary to control the flow of water and to prevent trench sloughing. Sediment-laden water from dewatering would be discharged to well-vegetated upland areas or contained behind silt fences. Silt fences installed at streambank or wetland boundaries prior to construction would be maintained until adjacent upland areas are successfully re-vegetated. Construction traffic would be routed over the nearby county road bridge.

DEQ considered several alternative crossing methods for the Musselshell River including dam and pump or flume and directional drilling. After consultation with DFWP biologists, DEQ concluded that the additional instream activity to install and remove temporary dams associated with the dam and pump and flumed methods would result in sediment increases which, depending on streamflow, could last longer than those associated with quickly trenching the river. A directionally drilled crossing would eliminate short term sediment increases and loss of roughly 0.5 acres of cottonwood forest, but DEQ considered likely costs to outweigh benefits.

DEQ believes Express should proceed with a dam and pump or a flumed crossing only if flow is less than 50 cfs. If flow exceeds 50 cfs then an open trench would be allowed between August 1 and October 15. DEQ recommends that block and check valves be installed on both sides of the river at this crossing because of the river's Class III fishery and its use as a source of municipal water supplies farther downstream.

Mud Creek

Mud Creek, as its name implies, is a silty perennial prairie stream with a 13 foot wide active channel. However, during the fall field inspection the creek was less than 3 feet wide, with steep sedge-covered banks. The bluff on the south side of the valley is steep, partially covered with grass and sage, and about 20 feet high. By the end of summer flow approaches zero and no fishery is present.

Express proposes to open trench this crossing and bury the pipeline 5 feet below the bottom of the stream channel. Propagules from salvaged topsoil would be relied upon to re-vegetate the streambanks. Upland areas would be reseeded with redtop and western wheatgrass unless otherwise specified by the landowner. Silt fences installed at streambank or wetland boundaries prior to construction would be maintained until adjacent upland areas are successfully re-vegetated. Construction traffic would use a ford, culverts, or a temporary bridge.

DEQ recommends that the proposed crossing method be adopted as the aquatic resources do not warrant special measures for protection.

Fish Creek

Fish Creek is a large perennial prairie stream which can be 30 feet wide in early summer. It is believed to provide habitat for the northern redbelly/finescale dace hybrid. Streambanks are well vegetated with grasses and shrubs, but no trees are present.

Express proposes to open trench this crossing and bury the pipeline 7 feet below the bottom of the stream channel unless bedrock is encountered in which case the pipeline would be buried 1 foot below the top of the bedrock for a burial length of 65 feet. Traffic would use a temporary bridge or ford the stream at the proposed crossing. Streambanks would be reseeded with a mix of western wheatgrass and snowberry. Silt fences installed at streambank or wetland boundaries prior to construction would be maintained until adjacent upland areas are successfully re-vegetated.

Because of the presence of a fish species of special concern, DEQ recommends that the crossing be made with a dam and pump or flumed crossing. Traffic would be routed through the dams or over a temporary bridge.

North and South Forks, Big Coulee Creek

The North and South Forks of Big Coulee Creek are intermittent streams. The active channel of the North Fork is 16 feet while that of the South Fork is 24 feet. In early fall, the North Fork is about 2 to 3 feet wide and less than a foot deep and has a few small trees present. The crossing site on the South Fork includes the small stream with several beaver dams. A dense stand of willows lines the north bank of the South Fork and a wetland area is found on the south bank. The South Fork provides habitat for the northern redbelly/finescale dace hybrid, which is considered by DFWP to be a fish species of special concern. The North Fork has not been sampled but lower reaches in this drainage provide habitat for this dace. Little is known about breeding habitat requirements for this hybrid.

Express proposes to open trench crossings of both the North and South Forks of Big Coulee Creek. The pipeline would be buried 4 feet below the bottom of the streambed at both crossings. The trench would be dewatered if necessary to control the flow of water to prevent trench sloughing on both crossings. Sediment-laden water from dewatering would be discharged to well vegetated upland areas or contained behind silt fences.

Unless otherwise specified by the landowners, revegetation efforts at both these streams would rely upon propagules in reclaimed topsoil on streambanks and wetland areas. Upland areas would be reseeded with western wheatgrass and redtop. Snowberry would be added to the upland seed mix on the North Fork. Silt fences installed at streambank or wetland boundaries prior to construction would be maintained until adjacent upland areas are successfully re-vegetated.

DEQ recommends that both crossings be constructed with dam and pump or flume methods because of habitat for a fish species of special concern. Construction traffic should cross these streams over a temporary bridge or culvert. It is believed these precautions should adequately protect aquatic habitat.

Middle, Cedar, Struck (2 crossings), Toll and Greenwood Creeks

All of these small intermittent prairie streams drain into either the Lake or Wheat basins near Rapelje. USGS topographic maps indicate these streams are perennial. All are 1 to 4 feet wide and generally less than a foot deep in August. The two basins are internally drained with no surface water outlets. Lake chubs are found in Middle and Cedar Creeks (Frazer, Kenneth J., 1992. Distribution of Hybrid Northern Redbelly Dace (*Phoxinus Eos*) X Finescale Dace (*Phoxinus Neogaeus*) in the Musselshell River Drainage Between Lavina and Harlowton. DFWP, Billings, Montana. 9 pages). Struck and Toll Creeks also contain minnows but they have not been identified to the species level. Greenwood Creek is dry over the crossing site and is unlikely to contain fish. Express would open trench each of these crossings and is expected to bury the pipeline at least 4 feet below the bottom of the streambed. The trench would be dewatered if necessary to control the flow of water and to prevent trench sloughing. Sediment-laden water from dewatering would be discharged to well vegetated upland areas or contained behind silt fences. Propagules from salvaged topsoil would be relied upon for reclamation of streambanks and wetland areas adjacent to all streams. **Table O-2** summarizes other species to be reseeded unless otherwise specified by landowners. Silt fences installed at streambank or wetland boundaries prior to construction would be maintained until adjacent upland areas are successfully re-vegetated.

Table O-2
Plant Species to be Included in Seed Mix
for Upland Areas Adjacent to Five Small Montana Streams.

Stream	Western Wheatgrass	Baltic Rush	Intermediate Wheatgrass	Inland Saltgrass	Redtop
Middle Creek	X	X			
Cedar Creek	X		X		
Struck Creek	X			X	
Toll Creek		X			X
Greenwood Creek	X				

On all but Cedar and Toll Creeks, reseeded areas would be fenced with four-strand barbwire fence if grazing cannot be deferred.

DEQ recommends that each of these crossings be built with the open trench method. Aquatic values are not great enough to warrant more costly methods. If flowing water is present, construction traffic should cross the streams on temporary bridges or temporary culverts, or fords covered with steel matting.

Valley Creek

Valley Creek is a perennial stream and a designated floodway which requires pipeline burial at twice the maximum scour depth. Valley Creek is a small to moderate-sized tributary of the Yellowstone River. It appears to be spring-fed. It supports a variety of nongame fish, mostly minnows and suckers, (Frazer, 1992).

The proposed route for the Express Pipeline crosses Valley Creek four times. The two upper crossings, (mileposts 247.3 and 247.5) are on a large meander or bend in the stream. Vegetation at these upper crossings consists of sedges on the immediate streambanks and grass with a few sagebrush plants in upland areas. Several trees are near the upper crossing but no trees are present at the lower crossing. Vegetation at crossings three and four is similar to the first two crossings, but cattails at crossing four were recently plowed up. Active stream width at the four crossings ranges from 12 to 134 feet. Shallow bedrock may be encountered during trenching especially at the upper two crossings.

Express proposes to open trench all four crossings. The pipeline would be buried six feet below the bottom of the streambed at the first, third and fourth crossings and 9 feet below the streambed at the second crossing. If bedrock is encountered, the pipeline would be buried 1 foot below the top of the bedrock. The trench as it approached the stream would be dewatered if necessary to control the flow of water and to prevent trench sloughing. Sediment-laden water from dewatering would be discharged onto well vegetated upland areas or contained behind silt fences. Construction traffic would cross the stream on temporary bridges or culverts. Construction at each crossing probably would be completed in less than a day.

Unless otherwise specified by the landowner disturbed upland areas would be reseeded with western wheatgrass. Propagules from salvaged topsoil would be relied upon for revegetation of streambanks. Silt fences installed at streambank or wetland boundaries prior to construction would be maintained until adjacent upland areas are successfully re-vegetated. Four-strand barbwire fence would be installed to exclude livestock if necessary, or grazing could be deferred until vegetation is re-established.

The pipeline could be re-routed to miss the upper two crossings of Valley Creek. This re-route would add about 0.5 mile to the length of the line and increase project costs. Bedrock probably would be encountered along this re-route, so costs could be somewhat higher.

DEQ recommends the crossings of Valley Creek be open trenched as proposed. Aquatic values of this stream do not warrant alternative crossing techniques or routings.

Yellowstone River

The Yellowstone River is the second largest river crossed by the proposed pipeline in Montana. The proposed crossing is immediately upstream and adjacent to FERC's approved route for the Altamont 30 inch natural gas pipeline. It is a designated floodway, and requires burial at twice the estimated maximum scour depth. The active channel at the proposed crossing is 1,070 feet wide and contains two islands at higher flows. At low flows, the channels between the islands are dry and the river forms a single channel between the north bank and the smaller island. The north bank and islands

are vegetated and contain cottonwood forest; the larger island has large trees, and the smaller island has younger trees and willows.

In the Park City area, the Yellowstone River has formed a broad alluvial valley about two miles wide. High shale bluffs capped by resistant sandstone beds border the valley. The river flows near the south edge of the valley in this reach and in some areas has encroached upon the valley walls resulting in steep bluffs roughly 100 feet high beginning at the waters edge. At the crossing location, the river flows against the south valley wall. Near vertical bluffs formed of shale and siltstone are present at the waters edge.

Water flows between the larger and smaller islands in the summer of a normal year. During the on-site inspection in October flow in the channel between the islands was estimated to be roughly 200 cfs. In drier years, flow in this channel is less than a 100 cfs. Overall mean monthly flows at Billings range from 25,180 cfs in June to 4,120 cfs in September.

The Yellowstone River is the second most highly valued stream crossed by the pipeline in Montana. DFWP classifies the Yellowstone River as a Class II fishery. Eleven species of game fish are common in this reach including rainbow and brown trout, mountain whitefish, and burbot (ling). Bellion Creek, a small intermittent stream, joins the Yellowstone from the south at the proposed crossing. Bluffs adjacent to Bellion Creek rise nearly vertically for 45 feet above the river as shown in Figure O-7. Express proposes to open trench the Yellowstone River but has conducted preliminary field investigations of a directionally-drilled crossing. A directionally drilled crossing would result in fewer impacts to the river and its banks but costs are estimated to be roughly \$1 million greater than for an open-trench crossing. Each crossing is described below.

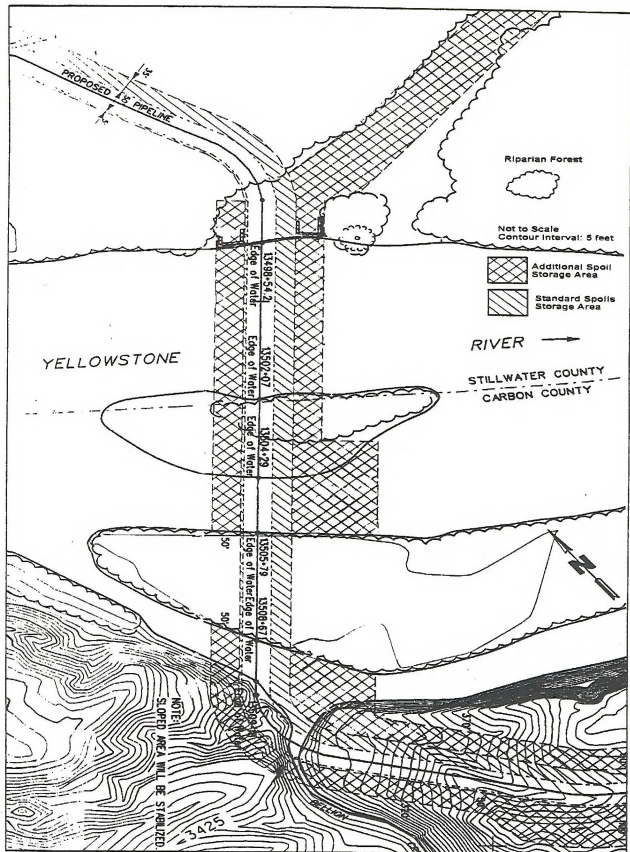


FIGURE 0-7. PROPOSED OPEN TRENCH CROSSING OF THE YELLOWSTONE RIVER

After: Express Pipeline, 1995

Proposed Crossing Method

The open-trench crossing would be done in late summer or early fall before the onset of brown trout spawning. Signs would be erected to warn boaters of instream construction activities. Trees would be cut at ground level. About 3.5 acres of riparian forest would be cut. Pipe would be welded, prepared, and pretested on the north bank; overburden would be removed from both banks. This would be a significant undertaking on the south bank where 25 feet of overburden would have to be removed and transported to a disposal site southeast of Bellion Creek. Because of the steep slope traversed by the pipeline, disturbance is likely to extend from the water's edge at elevation 3,370 feet to elevation 3,425 feet.

Two backhoes would be used to excavate the trench 8 feet below the bottom of the riverbed, one working from each side of the river. The eight foot deep burial below maximum riverbed depth would extend for 1,170 feet including the 1,050 foot active channel and 50 feet beyond the left bank. If bedrock is encountered then the pipeline would be buried at least one foot below the top of the bedrock. Spoils would be stored along the north bank, and between islands as shown in (Figure O-7). Spoils probably would be stored instream on the downstream side of the trench. This material would be used to refill the trench after the pipe is in place. Instream work could take up to 5 days to complete. This burial depth could require a 20 to 25 foot deep trench at the islands.

Disturbed streambanks would be re-contoured; the south bank would not be restored to the original vertical bluff but instead left with a "stair step" surface to reduce erosion of the 45 foot vertical bank. Structural stabilization of the north bank may be required to prevent lateral stream migration and bank erosion. Upland areas would be seeded with western wheatgrass unless otherwise specified by the landowner. Cottonwood seedlings would be planted on portions of the disturbed area where they would not interfere with operation of the pipeline. Disturbed areas would be fenced if grazing cannot be deferred.

Directionally Drilled Alternative

DEQ also considered a directionally drilled crossing of the Yellowstone River. If the Yellowstone crossing were directionally drilled the crossing would be located about a half-mile downstream from the proposed open trench crossing (Figure O-8). Here the drilling operation would encounter shale for most of the crossing with only a small amount of alluvium present where the drilling would commence on the north side of the river. Based on one boring at this location showing alluvium suitable for directionally drilling, Express has indicated that a directionally drilled crossing would be feasible at this location.

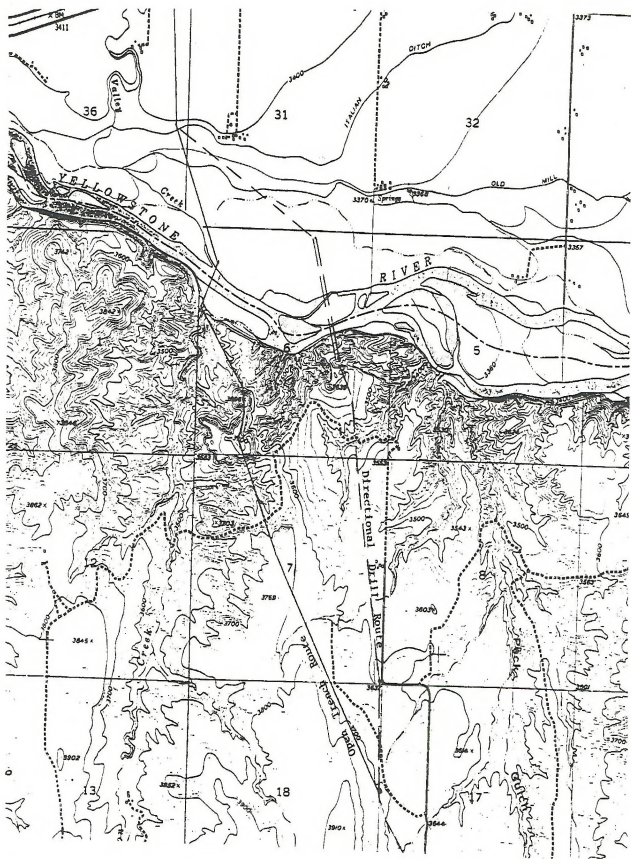


FIGURE 0-8. ALTERNATIVE LOCATIONS OF PIPELINE CROSSINGS ON THE YELLOWSTONE RIVER

Revised cost estimates indicate that directionally drilling the Yellowstone River would cost \$1,041,000 more than the open trench crossing. A directionally drilled crossing would eliminate all disturbance of the streambed and streambanks and no sediment increases are expected. Less riparian vegetation would be disturbed by directionally drilling than with open trenching.

Other crossing methods and locations

A dam and pump or flumed crossing is not feasible on the Yellowstone River because of the volume of water that would have to be moved around the trench. Given the height of the south bank it would be impractical to horizontally bore the crossing because of the extensive excavation for a bell hole.

DEQ briefly considered a routing alternative which would avoid the steep, cliff-like banks on the south side of the river. This would require the pipeline to be moved at least 3 miles downstream. DEQ believes that increased impacts to residential and agricultural land and increased costs of more than \$2.4 million did not justify further consideration of this alternative when a directionally drilled crossing could accomplish the same goals for half the additional cost.

Recommendation

DEQ asks the Board for the authority to work with the Corps of Engineers and other local, state, and federal agencies to determine the most suitable crossing method, location, and additional mitigating measures.

If open trenching is selected then consideration should be given to moving the alignment on the south bank and co-locating the Express Pipeline and the Altamont line in Altamont's right-of-way (perhaps at a greater depth than Altamont's pipeline) to significantly reduce the amount of disturbance on the south bank. Otherwise topsoil should be salvaged from the spoils disposal area southeast of Bellion Creek and used to reclaim it. Silt fences should be installed on disturbed portions of the larger island to prevent storm water runoff from reaching the river. If flow between the two islands is sufficiently low then it should be diverted into the main channel with rock gabions or sandbags to prevent water from flowing through temporary spoils storage areas.

If the crossing is directionally drilled, a separate Corps of Engineers 404 permit and DEQ 3A permit would not be required. Concerns over streambank stability and recontouring would be avoided and river siltation would not occur. DEQ would work with DNRC's Lands Division to address the needed easement to directionally drill under state owned lands.

Rock Creek

Rock Creek is a large tributary to the Clarks Fork of the Yellowstone. The proposed crossing is roughly 3.5 miles above the mouth of Rock Creek. The active stream channel is about 150 feet wide at the crossing and meander scars are apparent across the 1,000 foot width of modern floodplain indicating a constantly changing active stream channel. Vegetation consists of mature cottonwoods on the northwest bank and a variety of willows, younger cottonwoods, and wetland vegetation across the floodplain. The proposed alignment crosses a fairly wide riparian area created by a series of beaver dams and high water table. A low terrace about 5 feet high borders the north limit of the floodplain. The south floodplain limit is a steep, near vertical bank 20 feet high. The landowner,

Mrs. Hicks, is concerned about the disturbance in this marshy area which she and her family value highly for its waterfowl production and natural character.

Rock Creek is considered a Class IV or moderate fisheries resource. Brown trout are common in this reach but rainbow trout are rare. Aquatic habitat is limited by severely reduced flows during the irrigation season.

Express proposes to open trench the crossing of Rock Creek and bury the pipeline 10 feet below the bottom of the stream channel over a distance of 1,065 feet. The bed material consists of poorly graded gravel with sand. Shallow bedrock is likely to be encountered over at least some of this distance and where it is, the pipeline would be buried at least 1 foot below the top of bedrock. The trench would be excavated with a dragline or two backhoes; if backhoes are used, one would work from each bank. Equipment would be moved from one side of this crossing to the other on US 310 which crosses Rock Creek about a mile downstream from the pipeline crossing. Straw bales or silt fences would be installed to control silt between the work areas and the creek. Woody vegetation would be cut at ground level where possible and the stump and root system left in place. Following construction the stream banks would be restored to near natural contours and re-vegetated. Silt fences installed at streambank or wetland boundaries prior to construction would be maintained until adjacent upland areas are successfully re-vegetated. Disturbed streambanks would be fenced unless grazing could be deferred.

During the inspection DEQ examined another possible crossing on the downstream side of the proposed Altamont pipeline route. A crossing at this location would reduce but not eliminate construction in wetland areas. The realignment would be located farther from the Hicks' house and avoid a tree the family wishes to preserve. This alternative route probably would result in about the same number of trees being cut as on the original alignment, but crosses the creek in an area where the channel is more braided than the proposed crossing.

The Agencies also have considered the use of a directionally-drilled crossing at Rock Creek. Express believes that a directionally-drilled crossing is technically feasible, based on current information. Use of this crossing method would eliminate instream sediment increases during construction, would preserve wetland vegetation and mature cottonwoods, and could be done in a manner to preserve the tree the Hicks family is concerned about. The pipeline would not have to be rerouted to accomplish a directionally drilled crossing. These benefits would come at an additional cost of \$630,000.

DEQ recommends that the Board allow DEQ staff to work further with Express on an open trench crossing at the alternate crossing location. The added cost of a directionally-drilled crossing is not believed to be warranted by the environmental benefits.

Clarks Fork of the Yellowstone

Express's route crosses the Clarks Fork of the Yellowstone near the town of Edgar. Flow exceeds 50 cfs during the low flow period. The Clarks Fork is about 180 feet wide at the crossing. The 200 foot wide active channel is incised below the valley floor and located near the right valley wall of the 9,000-foot-wide broad alluvial valley. The north bank is steep and actively eroding at an average rate of 2 feet a year (HKM April 1992). The north bank is adjacent to a hay field. The south bank has a strip of riparian cottonwood forest. This portion of the Clarks Fork is rated as Class III or

substantial fishery resource with burbot (ling) being the most common game fish. Brown trout are rare in this reach.

Express proposes to open cut the crossing of the Clarks Fork. The pipeline would be buried 6 feet below the bottom of the riverbed for a total distance of 950 feet. The bed material is a coarse poorly graded gravel. Construction traffic would use an existing county road bridge near Edgar to move around the river crossing. Construction methods would be similar to those proposed for Rock Creek. Upon completion of construction the stream banks would be re-contoured to approximately original configuration. The north bank would be temporarily stabilized with small-to-moderate size boulders installed as riprap along the face of the disturbed left (west) bank to impede migration of the bank to the west and provide stability during the revegetation period. The riprapped section will be revegetated by the applicant until permanent riparian vegetation is established. Major structural stabilization of the north bank is not recommended because such action might affect downstream stability. Disturbed areas would be reseeded with a mix of western wheatgrass, reedtop, woods rose, and western snowberry. Willow and cottonwood cuttings or seedlings would be planted on disturbed areas but not directly over the pipeline. Silt fences installed at streambank or wetland boundaries prior to construction would be maintained until adjacent upland areas are successfully re-vegetated. Streambanks would be fenced unless grazing could be deferred.

Agencies also considered the use of a directionally drilled crossing on the Clarks Fork. Directional drilling would eliminate short-term increases in sediment production, conserve riparian forest, and preserve channel and streambank stability. However, directionally drilling the Clarks Fork would cost about \$650,000 more than a conventional open-trench crossing.

Neither dam and pump nor flumed crossings were seen as suitable because of the volume of water that would have to be handled and the increased duration of sediment production associated with installation and removal of the dams.

DEQ recommends that Express cross the Clarks Fork with open-trench construction. The environmental benefits of directional drilling do not outweigh the additional costs. DEQ also recommends that block and check valves be installed at this crossing to minimize the effects of any spill into the stream. Construction of the crossing should occur between August 1 and September 15.

Five Mile Creek

Five Mile Creek has an incised channel with a near vertical cohesive left bank rising about 8 feet from the September surface water elevation. The right bank has a 15-foot wide flood terrace 2 feet above the observed water elevation. The right bank then rises to an 8-foot high bank equal in height with the left bank. Riparian vegetation is mainly grasses and low shrubs with occasional cottonwood trees. No game fish are believed to be found in this portion of the stream. The active channel width is 6 feet.

Carbon County has designated Five Mile Creek as a floodway/ floodplain. Scour calculations for a 100-year streamflow event were computed on the basis of a constricted flow theory due to the incised nature of the channel at the crossing location. Estimated bed scour and degradation was computed to be 4 feet, which led to a recommended burial depth of 8 feet. The applicant proposed an open trench construction method and DEQ concurs. Impacts would result from disturbance

caused by construction of the trench through the flood plain and incised channel. The trench as it approaches the stream channel, would be dewatered if necessary to control the flow of water and to prevent trench sloughing. Sediment-laden water from dewatering would be discharged to well vegetated upland areas or contained behind silt fences. Propagules in re-spread topsoil would be relied upon for vegetation of wetlands and western wheatgrass would be reseeded in upland areas, unless otherwise specified by the landowner. Silt fences installed at streambank or wetland boundaries prior to construction would be maintained until adjacent upland areas are successfully re-vegetated. Disturbed areas would be fenced by Express if necessary.

DEQ recommends total burial length to be 50 feet including 6 feet across the active channel, extending 15 feet beyond the left bank and 29 feet beyond the right bank. This is consistent with a discussion with Nebel (1995) modifying the applicant's proposal by switching the left and right bank burial distances. Aquatic resources at this location do not warrant a dry crossing. Access should be routed over the nearby county road bridge.

Sage Creek

Sage Creek is a broadly braided stream with four channels at the crossing location and occupies a wide floodplain. Three of the four channels are grassy swales, while the southern most channel has been planted and planted under the Conservation Reserve Program. The U.S. Geological Survey mapped this segment of Sage Creek as perennial, but no water was present during a September field inspection. The active channel area is 409 feet wide. Local vegetation consists of scattered sagebrush and grass. No fish are present in this area of Sage Creek as the entire flow of the creek is diverted further upstream for irrigation.

Carbon County has designated Sage Creek as floodway/ floodplain. Sage Creek drains the west side of the Pryor Mountains and has an approximately 75 square mile drainage area at the crossing location. The County Floodplain Manager reports that this area is prone to flash flooding and there have been past problems with oil and gas lines becoming exposed during high runoff events. The applicant has proposed open-trench construction and a 6-foot burial depth for the length of the active channel and 15 additional feet on both the left and right banks for a total 6-foot deep burial of 439 feet in accordance with floodplain regulations. Disturbed areas would be reseeded with western wheatgrass unless otherwise specified by the landowner and would be fenced if necessary. The trench as it approaches the stream, would be dewatered if necessary to control the flow of water and prevent trench sloughing. Sediment-laden water from dewatering would be discharged to well vegetated upland areas or contained behind silt fences.

DEQ recommends Sage Creek be crossed as proposed.

Piney Creek

Piney Creek originates in the Prior Mountains at Piney Creek Spring not far from the Montana Wyoming border. Near the spring, Piney Creek supports an isolated population of genetically pure westslope cutthroat trout. The entire flow of Piney Creek is diverted for irrigation above the proposed crossing and the affected reach of stream does not appear capable of supporting many fish. Stream banks are covered with dense, almost impenetrable stands of willow. The active channel is 10 feet wide.

Express proposes to open trench the Piney Creek crossing. The pipeline would be buried 4 feet below the bottom of the streambed. The trench as it approaches the stream would be dewatered if necessary to control the flow of water and to prevent trench sloughing. Sediment laden water from dewatering would be discharged to well vegetated upland areas or contained behind silt fences. Willows would be replanted next to the stream and western wheatgrass seeded in upland areas. The area would be fenced to exclude livestock if necessary.

DEQ recommends that the Piney Creek crossing be open trenched as aquatic resources do not warrant the extra costs associated with other methods.

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APPENDIX P
OUTLINE OF THE EXPRESS PIPELINE
SPILL PREVENTION, CONTAINMENT, AND CONTROL PLAN



EMERGENCY RESPONSE PLAN FOR EXPRESS PIPELINE

Part 1 General Emergency Plan

Table of Contents - Part 1

1. Introduction

- a. Policy
- b. Corporate Statements
 - Emergency Preparedness Commitment
 - Environmental Policy Statement
- c. Pipeline Overview

I Purpose of the Plan

II Organization

- a. Description of the Plan
- b. How to Use the Emergency Response Plan
- c. Relationship to Other Manuals

III Distribution

- a. Manual Locations
- b. Manual Revisions

2. Pre-Emergency Planning

I Emergency Responsibilities

- a. Company Personnel Responsibilities
- b. Department Responsibilities
- c. Emergency Organization - Incident Command System

II Training

- a. Training Courses
- b. Exercises

III Pre-Planning Measures

- a. Emergency Response Units
- b. Cooperatives
- c. Contractors & Suppliers
- d. Landowner/Occupant Notification
- e. External Agencies
- f. Evacuation Plans

IV Special Requirements

- a. Environmental Sensitivity Maps
- b. Control Point Identification

3. Emergency Notification and Reporting Procedures

I Notification and Reporting Procedures

II Notification Procedures

- a. Preliminary Incident Report
- b. Detailed Incident Report
- c. Dangerous Goods Occurrence Reports

III Claims Notifications

- a. Insurance Claims
- b. Landowner Claims

4. Safety Precautions

I Employee Responsibilities

- a. Management
- b. Employee
- c. Contractor

II Safety Equipment

III Spill Site Safety

- a. General Safety Precautions
- b. Leak Exploration
- c. Explosion, Fire
- d. Dangerous Vapors
- e. Protective Clothing
- f. Decontamination
- g. First Aid
- h. Weather
- i. Shift Changes
- j. Public Access

IV Water Safety

- a. Personnel
- b. Equipment
- c. Boating Rules
- d. Boating Stability
- e. Work Areas
- f. Towing
- g. Anchoring
- h. Brooms, Skimmers
- i. Anchors, Cables
- j. Man Overboard
- k. Leaks
- l. Refueling

- V Product Characteristics**
- 5. Public Relations**
 - I Media Role**
 - II Handling Media and Public Inquiries**
 - a. Communication Responsibilities
 - b. Communication Guidelines
 - III Documenting Inquiries**
 - IV Controlling Access**
 - V Preparing Media Releases and Statements**
 - a. Initial Release
 - b. Subsequent Releases
 - c. Families of Injured Employees
- 6. General Emergency Procedures**
 - I Incident Logs**
 - II Command Post**
 - III On-Site Communications**
 - IV Site Security**
 - V Protecting the Public**
 - VI Environmental Procedures**
 - a. General Procedures
 - b. Sampling
 - VII Financial Authority**
 - VIII Waste Management**
 - a. Selecting a Waste Management Strategy
 - b. Waste Types
 - c. Temporary Storage Types
 - d. Transportation of Waste
 - e. Waste Disposal
 - IX Post Emergency Inspection**
 - a. Pipeline Facilities

X Post Mortem

7. Petroleum Leak Response Guidelines

I Introduction

II Spills on Land

- a. Selecting a Response Strategy
- b. Containment
- c. Recovery
- d. Clean-up

III Spills on Wetlands

- a. Selecting a Response Strategy
- b. Containment
- c. Recovery
- d. Natural Recovery
- e. Clean-up
- f. Treatment of Contaminated Wildlife

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- a. Selecting a Response Strategy]
- b. Containment
- c. Recovery
- d. Clean-up
- e. Treatment of Contaminated Wildlife

V Spills on a Lake

- a. Selecting a Response Strategy]
- b. Containment
- c. Recovery
- d. Clean-up
- e. Treatment of Contaminated Wildlife

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- a. Selecting a Response Strategy]
- b. Containment
- c. Recovery
- d. Clean-up

VII Spills Under Ice

- a. Selecting a Response Strategy]
- b. Containment
- c. Recovery
- d. Clean-up

- VIII Spills During Freeze-up and Break-up**
 - a. Selecting a Response Strategy]
 - b. Containment
 - c. Recovery
 - d. Clean-up
 - IX Protection of Sensitive Areas**
 - a. Selecting a Protection Strategy
 - b. Protection Techniques
 - c. Special Considerations for Sensitive Areas
 - d. Recovery
 - e. Clean-up
 - X Demobilization**
 - a. Deciding to Terminate Response
 - b. Consultation with Government Agencies
 - c. Site Restoration
 - d. Post Mortem
 - XI Post Site Monitoring**
- 8. Other Emergencies**
- I Hazardous Substance Spills**
 - a. General Precautions
 - b. Spills on Company Property
 - c. Spills Involving Vehicles Transporting Hazardous Substances
 - II Fire or Explosion**
 - a. Notification
 - b. Pipeline Operations
 - c. Fire-Fighting Procedures
 - d. Post-Emergency Inspection
 - III Medical Emergencies**
 - a. Notification
 - b. First Aid
 - c. Identification of Medical Facilities
 - d. Exposure to Hazardous Vapors and Substances
 - IV Bomb or Terrorist Threat**
 - a. Notification
 - b. Evacuation
 - c. Pipeline Operations
 - d. Investigations
 - e. Post Emergency Operations

- V **Natural Disaster**
 - a. Notification
 - b. Pipeline Operations
 - c. Emergency Procedures

VI **Aviation Emergencies**

VII **Computer Disaster Recovery Plan**

VIII **Missing Persons**

9. **Appendices**

I **Definition of Terms**

II **Useful Pipeline Information**

- a. Estimating the Volume of Oil in a Slick
- b. Pipe and Line Fill Characteristics
- c. Conversions - Volume (Liquid)
- d. Conversions - Volume
- e. Conversions - Velocity
- f. Conversions - Flow
- g. Conversions - Mass
- h. Conversions - Length

III **Sample Forms**

10. **Index - Part 1**

Part 2 Area Emergency Plan

Table of Contents - Part 2

11. **Introduction**

I **Purpose of Part II**

12. **Area Responsibilities**

I **Introduction**

II **Air Patrol Reports**

13. **Company/Cooperative Equipment**

I **Introduction**

II Company Environmental Response Units

III Cooperative Equipment Units

IV CAPP Environmental Protection Units

14. Area Maps

I Environmental Sensitivity Maps

II Protection of Affected Areas

- a. Water Supply Sources
- b. Water Control Structures
- c. Environmentally Sensitive Areas

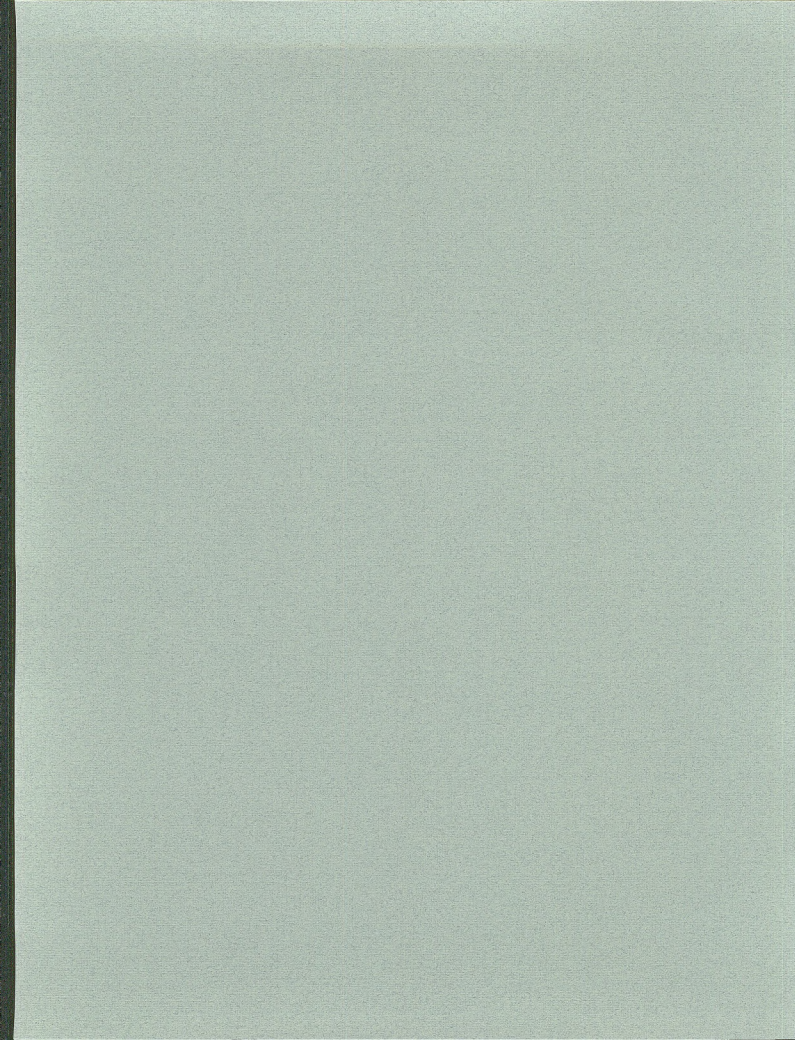
Associated Tables and Figures

15. Control Points and Specific Plans

Associated Tables and Figures



APPENDIX Q
RESPONSES TO COMMENTS



The Express Draft EIS was sent to 450 persons and organizations. After the listing of commenters on the DEIS, the list of agencies, companies, organizations, and individuals that requested a copy of the FEIS is presented. The 161 comments received on the DEIS are copied verbatim in this appendix followed by the agency response. Comment letters 21 through 93 and 103 through 132 were identical form letters. Letter 21 is printed to represent all the form letters.

EXPRESS CRUDE OIL PIPELINE DEIS COMMENT LETTER ROSTER

<u>No.</u>	<u>Date Received</u>	<u>Name</u>	<u>Address</u>
1	9/7/95	D. Michael Curran	Suite 500, 1st Nat'l Bank Bldg Great Falls, MT 59401
2	9/11/95	Agnew-Sullivan Incorporated	P.O. Box 1152 Thomas A. Sullivan Thermopolis, WY 82443-1152
3	9/11/95	Dept. Of the Army/Corps of Eng. Omaha District, Planning Div.	215 No. 17th St. Omaha, NE 68102-4978
4	9/11/95	Edith Gecky	Havre, MT
5	9/11/95	Pacific Power and Light	Casper Office, Casper, WY
6	9/11/95	Wyoming Independent Producers Assn.	P.O. Box 2325 Gillette, WY 82717
7	9/21/95	Dept. Of the Army/Corps of Eng. Cheyenne Regulatory Ofc	2232 Dell Range Blvd, Suite 210 Cheyenne, WY 82009
8	9/25/95	Wyoming Dept of Transportation Environmental Svcs Engineer	Timothy L. Stark, PE P.O. Box 1708 Cheyenne, WY 82003-1708
9	9/26/95	Senator Bill Hawks Wyoming State Legislature	P.O. Box 2835 Casper, WY 82602
10	9/27/95	David W. Klym, Vice President Prenalta Corporation	P.O. Box 2514 Casper, WY 82602
11	9/28/95	Michael Petronis	Billings, MT
12	10/2/95	Flying J, Inc. Jeff Utley, Refinery mgr.	P.O. Box 540180 North Salt Lake, UT 84054-0180
13	10/2/95	Petroleum, Inc. Robert C. Heaton, Vice Pres.	Epic Center, 301 No. Main, Suite 1300 Wichita, KS 67202-4813
14	10/10/95	George & Edith Gerky	Havre, MT
15	10/12/95	Pine Mountain Ranch, Charles Putman	Mills, WY

<u>No.</u>	<u>Date Received</u>	<u>Name</u>	<u>Address</u>
16	10/12/95	Marathon Oil Company, Rocky Mtn Region L.M. Mueller, Production	1501 Stampede Avenue Cody, WY 82414-4721
17	10/13/95	Phoenix Production Co. Robert E. McDougall, Pres.	P.O. Box 2653 Cody, WY 82414-2653
18	10/13/95	Gary M. Lewis	Cody, WY
19	10/13/95	Intermountain Conservation District Lee Liesinger, Board member	P.O. Box 2577 Gillette, WY 82717-2577
20	10/13/95	Belle Fourche Pipeline Company Robert Stamp	P.O. Drawer 2360 Casper, WY 82602
21	10/13/95	David K. Barker	Cody, WY
22	10/13/95	Gerald B. Pence	None given
23	10/13/95	Dona C. Copeland	Cody, WY
24	10/13/95	Thomas B. Smith	Cody, WY
25	10/13/95	Marvin Blakesley	None given
26	10/13/95	Steve Cronin	Cody, WY
27	10/13/95	Michael S. Motsch	Cody, WY
28	10/13/95	Debbie Daby	None given
29	10/13/95	Jan Tadrack	None given
30	10/13/95	Terence R. Ziehl	Cody, WY
31	10/13/95	Sandy Puetman	Cody, WY
32	10/13/95	Andrew A. Franklin	Cody, WY
33	10/13/95	Donna M. Stevison	Cody, WY
34	10/13/95	Diana L. Eskeli	Cody, WY
35	10/13/95	Cal Reavis	None given
36	10/13/95	Jerry L. Guthrie	None given
37	10/13/95	Walt J. Davenport	None given
38	10/13/95	David T. Johnson	None given
39	10/13/95	Terry K. Skinner	Cody, WY
40	10/13/95	Marcelyn E. Woods	Cody, WY
41	10/13/95	Susan Cougen	None given
42	10/13/95	Joe Bauer	Cody, WY

<u>No.</u>	<u>Date</u> <u>Received</u>	<u>Name</u>	<u>Address</u>
43	10/13/95	John D. Capanella	Cody, WY
44	10/13/95	Alan Parks	None given
45	10/13/95	Lauren M. Tibert	None given
46	10/13/95	Donna K. Sandry	Cody, WY
47	10/13/95	Heather Pence	Cody, WY
48	10/13/95	J.A. Vanaman	Cody, WY
49	10/13/95	[illegible]	None given
50	10/13/95	R. Brent Hayes	Cody, WY
51	10/13/95	Archie Johnson	Cody, WY
52	10/13/95	Brian A. Hodgson	Cody, WY
53	10/13/95	Robert A. Mees	Cody, WY
54	10/13/95	Grant F. Smith	Cody, WY
55	10/13/95	Debra Carroll	Cody, WY
56	10/13/95	Michael D. Blank	Powell, WY
57	10/13/95	Robert B. Hathaway, Human Res. Rep.	None given
58	10/13/95	Patrick T. Geile	Cody, WY
59	10/13/95	John F. Logan	None given
60	10/13/95	Michael Lee Cox	None given
61	10/13/95	Christine Wolf	Cody, WY
62	10/13/95	Connie A. Shwartz	None given
63	10/13/95	Mary M. Olson	None given
64	10/13/95	D.M. Johnson	None given
65	10/13/95	Jerry W. Collius	Cody, WY
66	10/13/95	G.K. Roberts	None given
67	10/13/95	Jena A. Smith	Cody, WY
68	10/13/95	Joan Butchart	None given
69	10/13/95	Janet L. Stehly	None given
70	10/13/95	Eugene M. Grant	None given
71	10/13/95	Dorlene McKnight	None given

<u>No.</u>	<u>Date Received</u>	<u>Name</u>	<u>Address</u>
72	10/13/95	Wes R. Handley	Cody, WY
73	10/13/95	Lance L. Arnold	Cody, WY
74	10/13/95	M.J. Suck	Cody, WY
75	10/13/95	W.D. Holmes	None given
76	10/13/95	Phillips E. Moore	Cody, WY
77	10/13/95	Dan Haman	Cody, WY
78	10/13/95	Vicki Schoeber	Cody, WY
79	10/13/95	Lee A. Brown	Cody, WY
80	10/13/95	John R. Cubbon	Cody, WY
81	10/13/95	Thomas E. Faulkner	Powell, WY
82	10/13/95	Jim Barto	Cody, WY
83	10/13/95	Neil R. Christofferson	Cody, WY
84	10/13/95	Phillip O. Yancer	Cody, WY
85	10/13/95	James W. Wimmmler	Cody, WY
86	10/13/95	Joseph C. Icenogle	Cody, WY
87	10/13/95	R.J. Bruner	Cody, WY
88	10/13/95	J.W. Bahn	Cody, WY
89	10/13/95	Kenneth K. Steele	Cody, WY
90	10/13/95	Robert O. Burton	Cody, WY
91	10/13/95	Jon R. Woods	Cody, WY
92	10/13/95	Charles R. Adams	Cody, WY
93	10/13/95	Debbie Kausoulos	None given
94	10/16/95	Hanover Irrigation District Terry Glanz, Superintendent	P.O. Box 965 Worland, WY 82401-0965
95	10/16/95	Kenneth D. Wagner, PC Atty at Law	111 West Second Street, Suite 305 Casper, WY 82601
96	10/16/95	Phillips 66 Company Mark A. Haney, General Mgr.	Woods Cross Business Unit Phillips Petroleum Company Salt Lake City, UT
97	10/16/95	U.S. Environmental Protection Agency Region VII, Montana Office	Federal Bldg 301 South Park, Drawer 10096 Helena, MT 59626-0096

<u>No.</u>	<u>Date</u> <u>Received</u>	<u>Name</u>	<u>Address</u>
98		Not Used	----
99	10/16/95	STE A [Science, Technology & Energy Auth.] Patrick T. Neary, Exec. Dir.	P.O. Box 3295 Laramie, WY 82071-3295
100	10/16/95	Eight Eight Oil Co. J.S. Beasley, Operations Supv.	P.O. Drawer 2360 Casper, WY 82602
101	10/16/95	Speak Up for Wildlife Foundation Dr. Brian L. Horejsi, Pres. Rocky Mtn Ecosystem Coalition Michael Sayer, Ex. Dir.	Box 84006, PO Market Mall Calgary, Alberta, Canada T3A 5C4 Room 921, 8th Ave. SW Calgary, Alberta, Canada T2P 1G5
102	10/16/95	Jim Geringer, Governor State of Wyoming	State Capitol Building Cheyenne, WY 82002
103	10/16/95	R.D. Snelling	Cody, WY
104	10/16/95	Virginia Mees	Cody, WY
105	10/16/95	Glenda J. Perry	None given
106	10/16/95	Kerry S. Roberts	Cody, WY
107	10/16/95	Mary Willson	Cody, WY
108	10/16/95	Muriel Behrens	Cody, WY
109	10/16/95	Rich Butcher	Cody, WY
110	10/16/95	Bill Wilsey	None given
111	10/16/95	Vickie Lynn Guthrie	None given
112	10/16/95	Dan [illegible]	None given
113	10/16/95	R.M. Snyder	None given
114	10/16/95	Jim Hand	Cody, WY
115	10/16/95	Doyle B. Stout	None given
116	10/16/95	Joe L. Leonard	None given
117	10/16/95	Carl L. Bassett	Cody, WY
118	10/16/95	Charlotte K. Jones	None given
119	10/16/95	Clifford C. Main	Cody, WY
120	10/16/95	Brenda Miller	None given
121	10/16/95	Harry J. Griffin	None given
122	10/16/95	Jon W. Giffin	None given
123	10/16/95	Marilyn J. Marcun	Cody, WY

<u>No.</u>	<u>Date Received</u>	<u>Name</u>	<u>Address</u>
124	10/16/95	Fredell M. Qualls	Cody, WY
125	10/16/95	Paul A Hessenthaler	None given
126	10/16/95	Ron Manley	None given
127	10/16/95	Ruth Getts	Powell, WY
128	10/16/95	Peter Okada	None given
129	10/16/95	Wes R. Handley	None given
130	10/16/95	Steve Daniels	Cody, WY
131	10/16/95	Rory M. Morgan	None given
132	10/16/95	Nancy Monnette	Cody, WY
133	10/17/95	IPAMS Geo H. Fancher, Jr. Crude Oil Comm-Chair Karyn L. Plan, Exec. Dir.	620 Denver Club Building 518 17th Street Denver, CO 80202-4167
134		Not Used	----
135	10/17/95	Merit Energy Company Sheryl J. Carruth, Regulatory Mgr.	12222 Merit Drive, Suite 1500 Dallas, TX 75251
136	10/17/95	Crysen Refining, Inc. Mark E. McSwain, Dir of Crude Supply	P.O. Box 870298 Woods Cross, UT 84087
137	10/17/95	Chevron USA Products Co. Larry R. Shanks	P.O. Box 25117 Salt Lake City, UT 84125
138	10/17/95	Dellos Farms, Herman Dellos, Pres. Brian Dellos, VP	Route 1, 890 Lane 4 Worland, WY 82401
139	10/17/95	Julander Energy Company Fred C. Julander, Pres.	One Norwest Center 1700 Lincoln, Suite 4720 Denver, CO 80203
140	10/17/95	Express Pipeline, Inc. Steven E. Hellman, Counsel	#3900, 421 7th Ave. SW Calgary, Alberta, Canada T2P 4K9
141	10/17/95	Rim Operation, Inc. V.A. Isaacs, Jr., Chief Ex. Ofcr.	5 Inverness Drive East Englewood, CO 80112
142	10/17/95	Frontier Oil Corporation Gerald B. Faudel, Vice Pres.	5340 S. Quebec St., Suite 200N Englewood, CO 80111-1911
143	10/17/95	Flying J. Inc. Rob Garner, Mgr Crude & LPG Supply	P.O. Box 540180 North Salt Lake, UT 84054-0180
144	10/18/95	Wyoming Heritage Foundation Bill Schilling, Ex. Dir.	139 West 2nd. Suite 3-E Casper, WY 82601

<u>No.</u>	<u>Date Received</u>	<u>Name</u>	<u>Address</u>
145	10/18/95	Montana River Action Network Donald H. Kern, Program Dir.	P.O. Box 383 Helena, MT 59624
146	10/18/95	Maurice W. Brown Jerry Moyle, Land Manager	Oil & Gas Division Office P.O. Box 2961 Casper, WY 82602
147	10/19/95	Crysen Refining, Inc. Mark E. McSwain, Dir of Crude Supply	P.O. Box 870298 Woods Cross, UT 84087
148	10/19/95	Julander Energy Company Fred C. Julander, President	One Norwest Center 1700 Lincoln, Suite 4720 Denver, CO 80203
149	10/19/95	IPAMS, Phillip Capra	620 Denver Club Building 518 17th Street Denver, CO 80202-4167
150	10/20/95	Chevron USA Products Co. Larry R. Shanks, Refinery Mgr.	P.O. Box 25117 Salt Lake City, UT 84125
151	9/6/95	Jeff Murray	Billings, MT
152	9/14/95	David Rickerson	Deer Park, TX
153	10/3/95	Larry and Sue Williams	Fort Shaw, MT
154	10/4/95	Chris Hunter, DFWP	Helena, MT
155	10/6/95	Gary Hedges, Stillwater County	None given
156	10/6/95	Stillwater County Commission	Box 970 Columbus, MT 59019
157	10/11/95	Eddie B. Luethold OK Ranch	Molt, MT
158	10/15/95	Kathryn Hicks	Joliet, MT
159	10/16/95	Terry Weber, Carbon County Weed District	None given
160	10/16/95	Patricia Saindon MT DOT	Helena, MT 59620-1001
161	10/30/95	Robert L. Nance Nance Petroleum Corp.	P.O. Box 7168 Billings, MT 59103

The following agencies, organizations, companies, and individuals received copies of the FEIS.

Federal Agencies

ACHP-Western Division of Project Review
Bureau of Indian Affairs, Fort Washakie WY
BLM, Bighorn Basin Resource Area
BLM, Billings Resource Area
BLM, Casper District Office
BLM, Cody Resource Area
BLM, Grass Creek Resource Area
BLM, Great Falls Resource Area
BLM, Havre Resource Area
BLM, Judith Resource Area
BLM, Lander Resource Area
BLM, Lewistown District Office
BLM Library, Denver CO
BLM, Miles City District Office
BLM, Montana State Office
BLM, Platte River Resource Area
BLM, Rawlins District Office
BLM, Washakie Resource Area
BLM, Washington DC
BLM, Worland District Office
BLM, Wyoming State Office
Bonneville Power Administration, Montana District Office
Bureau of Reclamation, Denver CO
Bureau of Reclamation, Montana Projects Office
Bureau of Reclamation, Mills MT
Bureau of Reclamation, North Platte Projects Office
Bureau of Reclamation, Regional Office
Congressman Thomas' Office
Congressman Williams' Office
Congresswoman Cubin's Office
Environmental Protection Agency, Region VIII
National Park Service, Washington DC
Senator Baucus' Office
Senator Burns' Office
Senator Simpson's Office
Senator Wallop's Office
US Army Corps of Engineers, Cheyenne WY
US Army Corps of Engineers, Omaha NE
USDA - Lolo National Forest
USDA - Natural Resource Conservation, Casper WY
USDA - Natural Resource Conservation, Greybull WY
USDI Geological Survey
USDI/OEA, Washington DC
U.S. Fish and Wildlife Service, Billings MT
U.S. Fish and Wildlife Service, Cheyenne WY
U.S. Fish and Wildlife Service, Helena MT
U.S. Fish and Wildlife Service, Worland WY
U.S. Fish and Wildlife Service, Washington DC
USNPS - Bighorn National Recreation Center
Western Area Power Administration

State Agencies

Montana Department of Environmental Quality, Air Quality Division
Montana Department of Environmental Quality, Water Quality Division

Montana Department of Environmental Quality, Waste Management Division
Montana Department of Commerce
Montana Department of Fish, Wildlife and Parks, Regional Supervisor, Billings
Montana Department of Fish, Wildlife and Parks, Regional Supervisor, Glasgow
Montana Department of Fish, Wildlife and Parks, Regional Supervisor, Great Falls
Montana Department of Natural resources, Central Land Office
Montana Department of Natural Resources, Land Administration Division
Montana Department of Natural Resources, Northeast Land Office
Montana Department of Natural Resources, Southern Land Office
Montana Department of Natural Resources, Water Resources Regional Office
Montana Department of Natural Resources, Water Rights Bureau
Montana Department of State Lands Montana
Montana Department of Transportation
Montana Environmental Information Center
Montana Governor, Natural Resource Policy Advisor
Montana Legislature, Legislative Environmental Policy Office
Montana Public Service Commission
Montana State Historic Preservation Officer
State of Wyoming DEQ/LQD
Wyoming Department of Public Lands and Farm Loans
Wyoming Conservation Commission
Wyoming Department of Agriculture
Wyoming Department Of Commerce and Cultural Resources Division Of Parks
Wyoming DEQ, Water Quality Division
Wyoming Federal Land Policy Office
Wyoming Game and Fish Department
Wyoming Governor - Planning Coordinator
Wyoming Governor - Farm Loan Office
Wyoming Oil and Gas Conservation Commission
Wyoming Public Lands Council
Wyoming State Engineer
Wyoming State Historic Preservation Officer
Wyoming State Legislature - Senator Hawks
Wyoming Transportation Department

County and Local Agencies

Big Horn County Weed and Pest Control
Big Horn County Commissioners
Campbell County Commissioners
Campbell County Economic development
Carbon County Board of Commissioners
Choteau County Board of Commissioners
City of Gillette
Fremont County Commissioners
Fergus County Board of Commissioners
Golden Valley County Board of Commissioners
Greybull Chamber of Commerce
Hill County Board of Commissioners
Hot Springs County Commissioners
Hot Springs County Weed and Pest Control
Hot Springs Conservation District
Mayor of Basin
Mayor of Casper
Mayor of Cody
Mayor of Cowley
Mayor of Deaver
Mayor of Frannie
Mayor of Greybull

Mayor of Kirby
Mayor of Lovell
Mayor of Manderson
Mayor of Ten Sleep
Mayor of Thermopolis
Mayor of Worland
Meeteetse Conservation District
Natrona County Commissioners
Nowood/Washakie Conservation District
Lovell Chamber of Commerce
Park County Commissioners
Park County Weed and Pest Control
Shoshone Conservation District
South Big Horn Conservation District
Stillwater County Board of Commissioners
Thermopolis Chamber of Commerce
Yellowstone County Board of Commissioners
Washakie County Weed and Pest Control
Washakie Conservation District
Washakie County Commissioners
Weston County Commissioner
Wheatland County Board of Commissioners
Wind River Tax Commission, Ft. Washakie WY
Worland Chamber of Commerce

Native American Organizations

Arapahoe Business Council
Arapahoe Tribal Council
Chippewa Cree Tribal Council
Crow Tribal Administration
Flathead Culture Committee
Fort Belknap Indian Tribes
Northern Cheyenne Cultural Committee
Shoshone Business Council

Educational

Big Horn County Library
Greybull Public Library
Hot Springs County Library
Johnson County Library
Lovell Library
Park County Library
Powell Public Library
Ten Sleep Public Library

Companies

Agnew-Sullivan Inc.
Altamont Gas Transmission Company
Amoco Production Company
Anderson Environmental Consulting
Archaeological Services - WWC
Barlow and Haun Inc.
Barnard Construction
Bates Enterprises

Bass Enterprises
Belle Fourche Pipeline Company
Best Alfalfa Hay
Buckskin Butte Ranch
Burlington Northern Railroad
Cenex Pipeline
Centennial Civil Engineers
Chevron USA Production Company
Crysen Refining Inc.
Dames and Moore
Dellos Farms
Eight Eight Oil Company
Energy Analysts International, Inc.
Express Pipeline
Exxon Company USA
FB&D Technologies Inc.
Florentine Exploration and Production Inc.
Flying J
Frontier Oil Corporation
Geyer Farm
Hanover Irrigation District
Home Oil Company
Interprovincial Pipeline
Julander Energy Company
Kennedy Oil Company
Knight and Masar
Lecthold OK Ranch
Lincoln Farms Inc.
Linnel, Newhall, Martin P.C.
Local 400 - Operating Engineers Union
Marathon Oil Company
Maurice W. Brown, O&G Division
Merit Energy Company
M&K Oil Company
Montana Power Company
Montana Rail Link
Morrison-Maierle Environmental Corporation
Nance Petroleum Company
Nutting Ranch
Pacific Power and Light Company
Petroleum Inc.
Petroleum Information Corporation
Phillips Petroleum Company
Phoenix Production Company
Pine Mountain Ranch
Prenalta Corporation
Purves Environmental
Ralph Wortham Construction
Rim Operation Inc.
TIC
Triple E Inc.
Tri-State G&T
US West Communications
Unicorn Drilling Inc.
Unifield Engineering
Vande Sande Brothers
Virgelle Mercantile
Wagner, P.C.
Welsh Land and Cattle
Williston Basin Interstate Pipeline Company

Wodrich Ranch Inc.
Wyo-Ben Inc.
Van Camp, West, Hayes and Meacham
2B Land and Livestock Company Inc.

Organizations

Arapaho Business Council
Carpenters and Joiners of America
Hotline Energy Reports
Intermountain Conservation District
IPAMS - Independent Petroleum Producers
Montana Association of Conservation District
Montana Audubon Council
Montana River Action Network
National Wildlife Federation
Petroleum Association of Wyoming
Petroleum Information Corporation
Public Lands Council
Rocky Mountain Ecosystem Coalition
Rocky Mountain Oil and Gas Association
Science Technology and Energy Authority
Sierra Club, Montana Chapter
Speak Up for Wildlife Federation
Wildlife Society, Wyoming Chapter
Wind River Multiple Use Advocates
Wyoming Archaeological Society
Wyoming Heritage Foundation
Wyoming Independent Producers Association
Wyoming Multiple Use Coalition
Wyoming Outdoor Council

Individuals

Adams, Charles
Addington, Antoinette
Bahn, J.W.
Baker, Mary J.
Barker, David K.
Barto, Jim
Bassett, Carl L.
Bauer, Joe
Behrens, Muriel
Benson, Scott
Birkhimer, Mary Lou
Blank, Michael D.
Booth, Elvin L.
Bouchard, Cecil E.
Brabec, Dennis
Bradbrook, Bob
Brown, Lee A.
Brown, Wyo J.
Bruner, R. J.
Buchanan, Neil and Duncan
Burton, Robert O.
Butcher, Rich
Capanella, John D.
Carroll, Debra

Chiropolis, Mike
Christofferson, Neil R.
Clark, Clair O.
Collius, Jerry W.
Copeland, Dona C.
Croft, Tom
Cronin, Steve
Cubbon, John R.
Curran, Michael
Daniels, Steve
DeSaveur, Jim
Doerr, Alvin
Dufour, W. P.
Eason, Rick
Ellis, Dave
Eskeli, Diana L.
Faulkner, Thomas E.
Franklin, Andrew A.
Fulton, Richard
Gerky, Edith and George
Geile, Patrick T.
Getts, Ruth
Geyer, Gary
Goldy, Gladys
Gort, Lillian E.
Grewell, Eunice C.
Haman, Dan
Hand, Jim
Hayes, R. Brent
Hedges, Gary
Hicks, Kathryn
Hilton, Blanche I.
Hodgson, Brian A.
Hornbeck, Garry
Icenogle, Joseph C.
Jamison, Mike
Johnson, Archie
Kezerle, D. J.
Lake, Dixie
Lewis, Gary M.
Linker, Dave
Lumburdt, Larry
Lunds, Arnold
Lynn, Herb and Jean
Main, Clifford C.
Manwaler, William
Marcum, Marilyn J.
McFarland, Jay A.
Mees, Robert A.
Mees, Virginia
Meyer, Jay
Miller, Daniel and Ellen
Monnette, Nancy
Moore, Phillip E.
Motch, Michael S.
Pence, Heather
Peters, Russell
Petronis, Michael
Pipp, Michael
Playhar, Vince

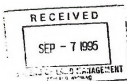
Puetman, Sandy
Qualls, Fredell M.
Richerson, David
Roberts, Kerry S.
Roggow, Gary
Runes, Joel
Sandry, Donna K.
Schoeber, Vicki
Schuster, Larry
Skinner, Terry K.
Smith, Grant and Jena
Smith, Michael and Colleen
Smith, Thomas B.
Snelling, R. D.
Steele, Kenneth K.
Stevison, Donna M.
Vanaman, J. A.
Wagner, Larry and Rita
Weppler, Dan
Wilde, Tom and Lynn
Wilson, Mary
Wimmler, James W.
Wise, Lyle R.
Wolf, Christine
Woods, John R.
Woods, Marcelyn E.
Yancer, Phillip O.
Ziehl, Terence R.

Media

Associated Press
Bear Paw Sentinel
Billings Gazette
Casper Star Tribune
Havre News
Lewistown News
Public Lands News
Oil and Gas Journal
Western Oil World

1

D. MICHAEL CURRAN
SUITE 500 FIRST NATIONAL BANK BUILDING
GREAT FALLS, MONTANA 59401
PHONE (406) 432-2121



September 5, 1995

Don Ogaard
Project Manager
Bureau of Land Management - Worland District Office
P.O. Box 119
Worland, WY 82401

In re: Cenex Front Range Pipeline Project (16"), and
Express Crude Oil Pipeline Project (24")

Gentlemen:

During the past two weeks I have had the opportunity to examine the following:

1. The Cenex Environmental Assessment for the 16" pipeline; and
2. The Environmental Impact Statement for the Express Crude Oil Pipeline (24").

An examination of these documents leads me to the following conclusions:

- A. Cancel out the construction of the Cenex Inc. Front Range Pipeline;
- B. Build the Express Crude Oil Pipeline.
 1. Increase the diameter of the Express Pipeline enough to take care of the crude oil requirement for the Cenex refinery at Laurel, Montana;
 2. Build a 16" lateral from the Express Crude Oil Pipeline to the Laurel and Billings refineries.

It would be a comparatively simple matter to enlarge the 24 inch diameter Express Pipeline to a 30 inch diameter pipeline. I have not had a complete engineering study made, as to the most economical way to increase the volume of oil put through the 24 inch pipeline. This could be done, however, in several ways, either by increasing the diameter of the Express Pipeline or by increasing the horsepower to the degree that adequate volumes of oil were delivered to Laurel, Montana and Caspar, Wyoming; now and in the future.

Response to Comment # 1, Curran:

The agencies reviewing the Cenex and Express pipeline proposals encouraged the project sponsors to collaborate on a joint project. The barriers to such a joint venture include a construction schedule difference of at least one year and a different market orientation for the two pipelines. The Cenex pipeline will carry sour crude oil to Montana and Colorado refineries, while Express proposes to transport sweet crude for Salt Lake and Midwest refineries. However, the two pipelines also share a number of capabilities, and it is possible that markets will only support the construction of one pipeline in the near term.

The agencies agree that the construction season from mid-summer through the fall is most appropriate, and Express will be required to construct during this period. Also, Montana's experience with past pipeline projects has helped frame the agency's proposed mitigation for the Express Pipeline.

The following would be the advantages in building a 30 inch pipeline to Casper with a lateral to Laurel:

1. The cost of one 30 inch line to Casper with a 16 inch lateral to Laurel would be far less than one 16 inch line from the Canadian border to Laurel and one 24 inch line from the Canadian border to Casper.
2. Instead of having two - three hundred mile environmental impacts, or scars, across the whole State of Montana, you would only have one - 300 mile scar.

NOTE: By plotting the right-of-way of the Cenex and the Express Pipelines, you find that they parallel one another to a degree and intersect about 20 miles north of Laurel. The proposed Express Pipeline passes just 10 miles west of Laurel. It would require only a short lateral of approximately 10 miles of 16 inch pipe to serve the Laurel refinery.

The economics of building an expanded Express Pipeline and canceling out the Cenex project are overwhelming. You have many environmental and economic advantages if you build the larger diameter system with a lateral to Laurel.

This larger system would not be any pioneering operation. Shell Oil Company has operated a system for over twenty years which moves crude oil from the Gulf Coast into the Illinois and Indiana refining areas. It is a 36 inch pipeline with numerous laterals to different refineries in Illinois and Indiana.

Further, the Express Pipeline has several other advantages which are as follows:

1. Construction of the pipeline from July 1 to October 1, has far less impact on ranchers along the right-of-way, wintering cattle, wintering wildlife, and county roads;
2. Construction costs are much less during the summer months rather than late fall and early winter;
3. The superior quality of a pipeline constructed in the summer and early fall, e.g., arc welding is difficult in cold weather.

Montana has many pipeline environmental problems at the moment. They are as follows:

1. Spread of noxious weeds;
2. Pipeline spill problems on the Flathead Reservation;
3. The complete shut down of Continental's pipeline between Missoula and Spokane.

In conclusion, I consider this to be the most viable option for the construction of a system to serve both Laurel, Montana, and Casper, Wyoming. Before either system is built, this option deserves intense study. It is the most certain option from an environmental and economic standpoint.

Yours Truly,

D. Michael Curran / cc

D. Michael Curran

DMC:cc

cc: Express Crude Oil Pipeline Co.,
Response to Environmental Impact
Statement



September 7, 1995

Mr. Don Ogaard
Worland BLM District Office
P.O. Box 119
Worland, Wyoming 82401

Dear Mr. Ogaard:

Please consider this letter as my opposition to the proposed Canadian Express pipeline from Hardisty, Alberta to Casper, Wyoming. According to Mr. Don Basko, Wyoming Oil and Gas Commission Director, this pipeline if completed will lower the price of asphalt crude.

As an independent oil producer, my concern is my ability to continue producing my 2-3 BOPD wells and possibly drill additional wells in our West Warm Springs Oil field. An additional concern of mine is the decaying tax base that some Wyoming counties such as: Washakie, Big Horn, and Hot Springs are experiencing. This pipeline and its supply of Canadian crude will only accelerate this decay and subsequently increase the county tax burden upon the people.

In the early eighties, 92% of the taxes in Hot Springs County were paid for the sale of crude oil. In 1995, that percentage has dropped to 73%, County Commissioners in the Big Horn Basin are not finding it easy to handle their funding responsibilities with the 12 mill limit. Lower crude oil prices due to the over-supply with Canadian crude will only make their job more difficult. The argument that lower crude prices might mean lower gas prices does not hold up. Integrated Oil companies enjoy lower crude prices so then refining profits remain high. They just don't seem to pass those savings on to the consumer.

In summary, please take a hard look at the consequences of lower crude oil prices due to oversupply of Canadian crude oil. I can be accused and probably found guilty of "protectionism" however, many people in the Big Horn and Powder River Basins will feel the effect of Canadian crude oil when they are "Summoned to the Tax Trough."

I am enclosing a copy of the letter I recently sent to our congressional delegation in Washington.

TAS:mmm
Encl.

Sincerely,

Thomas A. Sullivan,
Thermopolis, Wyoming

Response to Comment # 2, Agnew-Sullivan:

Please see rewritten Appendix N. Thank you for the data you supplied.

Agnew-Sullivan Incorporated
Post Office Box 1182 Thermopole, Wyoming 82443
Telephone (507) 684-3318



August 4, 1985

The Honorable Creg Thomas
S. D. B. #34
Washington, D.C. 20510

Dear Senator Thomas:

I'm enclosing for your information, a pipeline summary of a proposed pipeline from Herdley, Alberta, Canada to Casper, Wyoming. This proposed pipeline is in the planning stage and if completed, will have a definite impact upon the Wyoming price of crude oil. According to Mr. Don Basto, Director of the Wyoming Oil & Gas Commission, the price of Wyoming crude oil will go down if this pipeline becomes a reality.

Now that I have opened the door of "protectionism" and have decided to enter, I'm getting the feeling that this "free trade - open market" concept may have its problems. As you are aware, our domestic oil industry has taken a big hit during the past decade and in particular, the independent oil producers. We are so sensitive to the manner in which OPEC and other foreign producers operate as supply and demand totally dictates what price per barrel we get in Wyoming for our crude oil. Integrated oil companies can "bet from the other side of the plate" and they continue to show good profits.

As a former County Commissioner in Hot Springs County, I know the enormous effect crude oil price has upon the assessed evaluations in most of the counties in Wyoming. County Commissioners are finding the 12 mill levy maximum to be insufficient to handle their funding responsibilities and we are seeing library, museum, fair board, hospital and sheriff's budgets being cut due to the decrease in crude oil sales and lower crude oil prices. Equalization of County assessed evaluations would be a wonderful solution but it is not very realistic. Where were the rich oil producing counties in the early 80's when Plette, Goehen and other needy counties were in trouble?

Now that I have presented the problem, what about a solution? I think, considering the detrimental impact this proposed pipeline will have, that the crude oil coming thru this pipeline should be taxed in some way to give more stability to the price of Wyoming crude oil. It's too bad we could not get an oil import fee through Congress in 1985, which could have firmed up domestic oil prices and helped in the congressional money crunch.

It is most difficult to plan workovers and new drilling when the volatile nature of your product is evident each and every month. It is even more scary to think about our Wyoming asphalt crude price going to \$9.00 - \$10.00/bbl for any length of time. Believe me, the people of Wyoming ARE NOT PREPARED to pick up the tax burden if Mr. Don Basto is right and Wyoming asphalt crude oil price drops and does not rebound. It sounds like "protectionism" but it also appears to me that this type of free trade is a one-way street.

Sincerely,

Thomas A. Sullivan,
Independent Oil Producer



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
215 NORTH 17TH STREET
OMAHA, NEBRASKA 68102-4978



3

September 8, 1995

Planning Division

Mr. Don Ogaard
Bureau of Land Management
Worland District Office
P.O. Box 119
Worland, Wyoming 82401-0119



Dear Mr. Ogaard:

We received your letter of August 30, 1995 informing us of the upcoming Interagency Meeting to review the Express Pipeline Draft Environmental Impact Statement (DEIS) in Billings, Montana on 13 September, 1995. Because no one from our office will be able to attend this meeting, I would like to offer the following comments concerning permitting as obtained from our Helena, Montana and Cheyenne, Wyoming Regulatory offices.

Montana Regulatory: POC: Jean Ramer (406) 444-6670

Missouri River - No permit will be required provided all work takes place above ordinary high water. Directional drilling does not involve a discharge of material; therefore, no 404 permit is required. There will be no affect on the Missouri River because all work would take place well below the bed. Therefore no Section 10 permit is needed.

Yellowstone River - Individual permit will be required for open-cut method. Nationwide #12 does not apply on navigable waterways. There will be both a discharge of dredged material and the activity will have an affect on a navigable waterway. Therefore, the individual permit will cover both Section 404 and Section 10 authorization.

Musselshell River - An Individual permit may possibly be required. If there are no Historic Properties or endangered species and impacts are minimal a Nationwide permit may apply. If there are diversions and/or cofferdams, it will probably have to be authorized under the Individual permit process.

Any other waterway or wetland crossings will have to be located and identified if they haven't been already. In the past, wetland delineations have been submitted. A Section 404 permit is required for buried pipelines in wetlands. These usually are authorized under Nationwide Permit #12. (Copy enclosed).

Response to Comment # 3, Corps:

Thank you for the information on Section 404 permitting. It has been passed along to the project proponent.



33 CFR Section 330.6 Nationwide Permits

(b) Authorized Activities:

(12) Utility Line Backfill and Bedding. Discharges of material for backfill or bedding for utility lines, including outfall and intake structures, provided there is no change in preconstruction contours. A "utility line" is defined as any pipe or pipeline for the transportation of any gaseous, liquid, liquefiable, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone or telegraph messages, and radio and television communication. The term "utility line" does not include activities which drain a water of the United States, such as a drainage tile, however, it does apply to pipes conveying drainage from another area. Material resulting from trench excavation may be temporarily sidecast (up to three months) into waters of the United States provided that the material is not placed in such manner that it is dispersed by currents or other forces. The district engineer may extend the period of temporary side-casting up to 180 days, where appropriate. The area of waters of the United States that is disturbed must be limited to the minimum necessary to construct the utility line. In wetlands, the top 6" to 12" of the trench should generally be backfilled with topsoil from the trench. Excess material must be removed to upland areas immediately upon completion of construction. Any exposed slopes and streambanks must be stabilized immediately upon completion of the utility line. The utility line itself will require a Section 10 permit if in navigable waters of the United States. (Section 404)

(c) General Conditions: The following general conditions, where applicable, must be complied with for the Nationwide Permit authorization to remain valid:

(1) Navigation. No activity may cause more than a minimal adverse effect on navigation.

(2) Proper maintenance. Any structure or fill authorized shall be properly maintained, including maintenance to ensure public safety.

(3) Erosion and siltation controls. Appropriate erosion and siltation controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills must be permanently stabilized at the earliest practicable date.

(4) Aquatic life movements. No activity may substantially disrupt the movement of those species of aquatic life indigenous to the waterbody, including those species which normally migrate through the area, unless the activity's primary purpose is to impound water.

(5) Equipment. Heavy equipment working in wetlands must be placed on mats or other measures must be taken to minimize soil disturbance.

(6) Regional and case-by-case conditions. The activity must comply with any regional conditions which may have been added by the division engineer and any case specific conditions added by the Corps.

(7) Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

(8) Endangered Species. No activity is authorized under any Nationwide Permit which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act, or which is likely to destroy or adversely modify the critical habitat of such species. Non-federal permittees shall notify the district engineer if any listed species or critical habitat might be affected or is in the vicinity of the project and shall not begin work on the activity until notified by the district engineer that the requirements of the Endangered Species Act have been satisfied and that the activity is authorized. Information on the location of threatened and endangered species and their critical habitat can be obtained from the U. S. Fish and Wildlife Service and National Marine Fisheries Service.

(9) Historic properties. No activity which may affect historic properties listed, or eligible for listing, in the National Register of Historic Places is authorized, until the district engineer has complied with the provisions of 33 CFR 325, appendix C. The prospective permittee must notify the district engineer if the authorized activity may affect any historic properties listed, determined to be eligible, or which the prospective permittee has reason to believe may be eligible for listing on the National Register of Historic Places, and shall not begin the activity until notified by the District Engineer that the requirements of the National Historic Preservation Act have been satisfied and that the activity is authorized. Information on the location and existence of historic resources can be obtained from the State Historical Preservation Office and the National Register of Historic Places.

SECTION 404 ONLY CONDITIONS

In addition to the General Conditions, the following conditions apply only to activities that involve the discharge of dredged or fill material and must be followed in order for authorization by the nationwide permits to be valid:

(1) Water Supply Intakes. No discharge of dredged or fill material may occur in the proximity of a public water supply intake except where the discharge is for repair of the public water supply intake structures or adjacent bank stabilization.

(2) Suitable material. No discharge of dredged or fill material may consist of unsuitable material (e.g., trash, debris, car bodies, etc.) and material discharged must be free from toxic pollutants in toxic amounts.

(3) Mitigation. Discharges of dredged or fill material into waters of the United States must be minimized or avoided to the maximum extent practicable at the project site (i.e. on-site), unless the district engineer has approved a compensation mitigation plan for the specific regulated activity.

(4) Spawning areas. Discharges in spawning areas during spawning seasons must be avoided to the maximum extent practicable.

(5) Obstruction of high flows. To the maximum extent practicable, discharges must not permanently restrict or impede the passage of normal or expected high flows or cause the relocation of the water (unless the primary purpose of the fill is to impound waters).

(6) Adverse impacts from impoundments. If the discharge creates an impoundment of water, adverse impacts on the aquatic system caused by the accelerated passage of water and/or the restriction of its flow shall be minimized to the maximum extent practicable.

(7) Waterfowl breeding areas. Discharges into breeding areas for migratory waterfowl must be avoided to the maximum extent practicable.

(8) Removal of temporary fills. Any temporary fills must be removed in their entirety and the affected areas returned to their preexisting elevation.

(b) Authorized Activities:

(33) Temporary Construction, Access and Dewatering. Temporary structures and discharges, including cofferdams, necessary for construction activities or access fill or dewatering of construction sites; provided the associated permanent activity was previously authorized by the Corps of Engineers or the U.S. Coast Guard, or for bridge construction activities not subject to Federal regulation. Appropriate measures must be taken to maintain near normal downstream flows and to minimize flooding. Fill must be of materials and placed in a manner that will not be eroded by expected high flows. Temporary fill must be entirely removed to upland areas following completion of the construction activity and the affected areas so as to change their use. Structures left in place after cofferdams are removed require a section 10 permit if located in navigable waters of the United States. The permittee must notify the district engineer in accordance with the "Notification" general condition. The notification must also include a restoration plan of reasonable measures to avoid and minimize impacts to aquatic resources. The district engineer will add special conditions, where necessary, to ensure that adverse environmental impact are minimal. Such conditions may include; limiting the temporary work to the minimum necessary; requiring seasonal restrictions; modifying the restoration plan; and requiring alternative construction methods (e.g. construction mats in wetlands where practicable). This nationwide permit does not authorize temporary structures or fill associated with mining activities or the construction of marina basins which have not been authorized by the Corps. (Sections 10 and 404)

(c) General Conditions: The following general conditions, where applicable, must be complied with for the Nationwide Permit authorization to remain valid:

(1) Navigation. No activity may cause more than a minimal adverse effect on navigation.

(2) Proper maintenance. Any structure or fill authorized shall be properly maintained, including maintenance to ensure public safety.

(3) Erosion and siltation controls. Appropriate erosion and siltation controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills must be permanently stabilized at the earliest practicable date.

(4) Aquatic life movements. No activity may substantially disrupt the movement of those species of aquatic life indigenous to the waterbody, including those species which normally migrate

through the area, unless the activity's primary purpose is to impound water.

(5) Equipment. Heavy equipment working in wetlands must be placed on mats or other measures must be taken to minimize soil disturbance.

(6) Regional and case-by-case conditions. The activity must comply with any regional conditions which may have been added by the division engineer and any case specific conditions added by the Corps.

(7) Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

(8) Endangered Species. No activity is authorized under any Nationwide Permit which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act, or which is likely to destroy or adversely modify the critical habitat of such species. Non-federal permittees shall notify the district engineer if any listed species or critical habitat might be affected or is in the vicinity of the project and shall not begin work on the activity until notified by the district engineer that the requirements of the Endangered Species Act have been satisfied and that the activity is authorized. Information on the location of threatened and endangered species and their critical habitat can be obtained from the U. S. Fish and Wildlife Service and National Marine Fisheries Service.

(9) Historic Properties. No activity which may affect historic properties listed, or eligible for listing, in the National Register of Historic Places is authorized, until the district engineer has complied with the provisions of 33 CFR 325, appendix C. The prospective permittee must notify the district engineer if the authorized activity may affect any historic properties listed, determined to be eligible, or which the prospective permittee has reason to believe may be eligible for listing on the National Register of Historic Places, and shall not begin the activity until notified by the District Engineer that the requirements of the National Historic Preservation Act have been satisfied and that the activity is authorized. Information on the location and existence of historic resources can be obtained from the State Historical Preservation Office and the National Register of Historic Places.

Nationwide Permit Notification Procedures

The Corps nationwide permit program was described in the November 22, 1991, edition of the Federal Register. The nationwide permits and their application in Wyoming were further described in a Public Notice issued on January 21, 1992, by the Omaha District Office.

Several of the Corps' nationwide permits pertaining to the discharge of dredged or fill material into Wyoming waterbodies and/or wetlands have a condition which requires that the Corps be officially notified before the proposed work can begin.

This condition requires that the applicant notify the District Engineer of the proposed project in writing and provide the following information:

1. Name, address, and telephone number of the prospective permittee;
2. Location of the proposed project;
3. Brief description of the proposed project, the project's purpose, direct and indirect adverse environmental effects the project would cause, any other NWP's, regional general permits or individual permits used or intended to be used to authorize any part of the proposed project or any related activity;
4. Where required by the terms of the NWP, a delineation of affected special aquatic sites, including wetlands, and;
5. A statement that the prospective permittee has contacted:
 - A. The U.S. Fish and Wildlife Service (USFWS) regarding the presence of any federally listed, or proposed for listing, endangered or threatened species or critical habitat in the permit area that may be affected by the proposed project; and any available information provided by that agency. The address and phone number for the USFWS in Wyoming is:

U.S. Fish and Wildlife Service
4000 Morrill Avenue
Cheyenne, Wyoming 82001
Phone: (307) 772-2374
 - B. The State Historical Preservation Office (SHPO) regarding the presence of any historic properties in the permit area that may be affected by the proposed project; and

the available information, if any, provided by that agency. The address and phone number for the State of Wyoming SHPO is:

State Historic Preservation Office
Barrett Building
2301 Central
Cheyenne, Wyoming 82002
Phone: (307) 777-7697

A simple letter or the standard individual permit application form (ENG Form 4345) may be used as the notification document, but must clearly indicate that it is a Predischarge Notification and must include all of the information described above.

The information outlined is to be sent to:

Corps of Engineers
Cheyenne Regulatory Office
2232 Dell Range Blvd.
Suite 210
Cheyenne, Wyoming 82009
Phone: (307) 772-2300
Fax: (307) 772-2920

PUBLIC COMMENT ON THE
EXPRESS CRUDE OIL PIPELINE DRAFT ENVIRONMENTAL IMPACT STATEMENT
[PLEASE PRINT PLAINLY]

4

Commentors Name: Edith Gerky
Address:

1/11/95

*I do not wish or I will not
allow Express Pipeline Co. Pipeline
to cross my land.
Edith Gerky.*

Response to Comment # 4, Gerky:

BLM is making no decisions regarding the route on private lands. The BLM will not condemn access nor exercise eminent domain. Any such procedures would be pursued by the applicant under applicable state law.

Under the Montana Major Facility Siting Act (MFSA), the Express Pipeline may be approved by the Montana Board of Environmental Review (BER) when the selected alternative "minimizes the project's environmental effects when compared to the nature and economics of various alternatives" (p. 1-8, DEIS). The BER will decide Montana permitting actions, including acceptable levels of project impacts, route locations, and coordination of applicable Montana permit activities (Table 1 - DEIS).

The BER will hold a contested case hearing on the pipeline impacts, location alternatives and necessary permits after the Final EIS is issued. In the contested case hearing, there would be an opportunity for the affected landowners to participate and inform the BER of *specific* local impacts or alternative pipeline locations that would minimize local environmental impacts (water, soil, vegetation or wildlife) or social concerns (agriculture, residential, safety or aesthetic).

The described area appears not to be dissimilar from many other areas crossed by the pipeline with intermittent streams, pastures and dry land crops. Normal pipeline construction measures are generally used in crossing these land types. Specific environmental conditions could justify specific protective measures. If the landowner is concerned about farm implements hitting the pipeline, the pipeline could be buried at a depth of 4 feet, rather than at the standard depth of 3 feet. Double strength pipe could be used at the crossing of Spring Coulee to help reduce the chances of a spill occurring there.

If the BER approves pipeline construction, Express would negotiate with affected landowners for the necessary rights to locate, construct and maintain the pipeline as authorized under the Board's Certificate of Environmental Compatibility. In the event that easement negotiations fail, as a common carrier pipeline, Express could obtain and exercise right of eminent domain (condemnation), whereby the company could legally locate, construct and maintain the approved pipeline across lands where the landowner refuses to authorize a pipeline right-of-way (DEIS p. 4-48).

If the Montana BER approves the pipeline, a 500 foot wide route corridor would be designated for detailed negotiation between the pipeline company and the landowner in addressing landowner concerns.

PUBLIC COMMENT ON THE
EXPRESS CRUDE OIL PIPELINE DRAFT ENVIRONMENTAL IMPACT STATEMENT
[PLEASE PRINT PLAINLY]

5

Commentors Name: Pacific Power 9/11/95
Address:

Response to Comment # 5, Pacific Power:

Thank you for your comment.

For the general public's information

Pacific Power, will be required to provide
electric service to one on shore pump station ~~that~~
~~are~~ located in Wyoming. We intend to submit a
separate right-of-way application to BLM, however,
the power lines ^(lines) and construction of the
line itself ^(lines) are being considered in this EIS
as an "auxiliary facilities" associated with the
pipeline. ^{property} The exact location of the powerline has not
yet been established in the field.

If anyone has concern about the powerline ^{or transmission impact}, it will
be glad to address those concerns separate than
the Express Pipeline project.



Response to Comment # 6. WIPA:

Please see rewritten Appendix N. Thank you for the data you supplied.

September 11, 1995

COMMENTS TO BUREAU OF LAND MANAGEMENT
PUBLIC HEARING ON THE EXPRESS PIPELINE
DRAFT E.I.S.

The Express Pipeline may result in economic chaos, social tragedy and extreme reduction of Wyoming's existing tax base. The risk of these possibilities is *not* thoroughly addressed by the existing draft EIS.

It is a fundamental duty of this EIS to determine socio-economic impact. This impact is easily assessed.

WIPA feels there is strong probability this pipeline will force a continued decrease in local crude oil prices; especially a reduction in the type of crude predominantly produced in Wyoming. Much of Wyoming's crude production is low grade and therefore more susceptible to market pressures. A further reduction in prices obtained by local producers would result in loss of existing production. In addition, it would result in an elimination of the vast majority of future exploration.

This question, WHETHER THE LOCAL PRICE OF OIL WILL FALL, *must* be addressed in the final EIS. Once that question is confronted, then it must be determined how much production will be lost as a result of the decline in price.

WIPA feels there is good reason to believe the Express Pipeline will cause a reduction in local tax revenue. It is common knowledge that Canadian oil and gas production is lightly taxed. This is in sharp contrast to local production which is heavily burdened by state and county taxes and royalties. How can local producers compete in this atmosphere?

The existing draft EIS does not address these issues head on. It is totally inadequate and poorly crafted.

The existing draft, without stating a reason, concludes that the Express Pipeline would bestow some favorable economic benefit. WIPA believes that this conclusion is false. The potential impact will be disastrous. This possibility must be considered adequately and competently.

The EIS must address the following questions:

HOW MUCH WILL THE EXPRESS PIPELINE REDUCE THE PRICE OF LOCAL CRUDE OIL PRODUCED IN THIS REGION?

HOW MUCH PRODUCTION WILL BE LOST BY THIS PRICE REDUCTION? THE AMOUNT OF PRODUCTION LOST FROM REDUCED EXPLORATION SHOULD BE INCLUDED IN THIS ESTIMATE.

HOW MANY JOBS WILL BE LOST?

HOW MUCH WILL TAXES HAVE TO BE RAISED ON AGRICULTURE, BUSINESSES AND INDIVIDUALS TO OFFSET THESE LOSSES?

WHAT SOCIAL HARDSHIP WILL RESULT?

WIPA feels that the answers to these questions will weigh heavily against the granting of the right of way for the pipeline. Alternative #1 should be chosen.

Attachments

WYOMING INDEPENDENT PRODUCERS ASSOCIATION
MEMBERS/1995

3 G, Inc.	Marathon Oil Company
Ampolex, Inc.	Maxim Drilling & Expl.
Anderson Oil Co.	McMurry, W.N.
Ant Hills Production	Metfuel Wyoming, Inc.
Arnell Oil Co.	Mitchell Energy Corp.
Axess Resources	Monahan, Rex
Banta & Haigh	Montana & Wyoming Oil Co.
Basin Exploration	Nerd Enterprises
Bass Enterprises	North American Resources
Berenergy Corp.	North Finn
Bessemer Oil Co.	Northern Production Company
Big Horn Anchor Service	Northern States Tools, Inc.
Bill Sauer Companies	Oedekoven Water & Oil, Inc.
Black Hawk Crane	Olympic Environmental
Brown Operating	Parker & Parsley
Centennial Energy	Pasha Publishing
Central Operating, Inc.	Petro Energy, Inc.
Cheetah Oil	Petroleum, Inc.
Chemily Management	Phoenix Production Co.
Club Oil & Gas, Inc.	Powder River Oil Co.
Cook, D.L.	Powder River Petroleum
Cork Petroleum, Inc.	Presidio Exploration, Inc.
Cox Equip. & Supply	Ptasynski, Harry
Creek Oil	R&S Well Service
Cyclone Drilling	Ranch Oil Company
DCD Operating	Reg's Well Service
Dowell Schlumberger	Rodgers, Jim
Dunbar Well Service	Samson Resources
Dyna Jet, Inc.	Sayers Operating
Evertson Well Service	Schlaikjer, Jr., Arthur L.
Fancher Oil Co.	Scurlock Permian Corp.
Farnsworth Oil Co.	Seale Oilfield Consultants
Ferguson, Bob	Sharkey Well Service
Freiberg & Company	Smith, Conley
Frontier Oil Corp.	Stovall Oil Co.
Goldmark Engineering	Texasco Trading and
Graham Resources, Inc.	Transportation
Great Northern Drilling Co.	Tom Brown, Inc.
Herbaly Petroleum Corp.	Townsend, Charles
Incline Reserves, Inc.	Union Pacific Resources Company
Independent Production Co.,	Updike Brothers, Inc.
J.W. Gibson Well	Vessels Oil & Gas Company
Kennedy, John	Western Production Co.
Kiesling Oil Co.	Whiting Petroleum Corp.
Kirkwood & Darby	Winco Petroleum
Kirkwood Oil & Gas	Winkler, L.W., Jr.
Klabzuba Oil & Gas	Wold Oil Properties
L & J Operating Co.	Wyo. Oil & Minerals
Linden Bonding	Wyo. Western Oil
Low, D.J.	Yates Petroleum Corp.
Lonabaugh & Riggs	Yegan, E.C.
M-3 Industries	
Manewal/Bradley	
Manx Oil Corp.	



RECEIVED

SEP 21 1995

MAIL TO
ATTENTION OF

Cheyenne Regulatory Office
2232 Dell Range Blvd., Suite 210
Cheyenne, Wyoming 82009

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
215 NORTH 17TH STREET
OMAHA, NEBRASKA 68102-4978

September 15, 1995



7

Response to Comment # 7, Corps:

The suggested material has been added to page 4-25.

Mr. Don Ogaard
Bureau of Land Management
Worland District Office
P.O. Box 119
Worland, Wyoming 82401

Dear Mr. Ogaard:

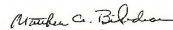
This is in response to your agency's September 8, 1995 request for comments on the Express Crude Oil Pipeline Draft Environmental Impact Statement. Understand that these comments relate only to those aspects of the project to occur in Wyoming. The Montana Regulatory Office should comment on that portion of the project in Montana.

A review of the EIS indicates that multiple waters of the U.S., including the Big Horn, Greybull, and Shoshone Rivers and their associated wetlands, will be crossed by the project. It appears that activities associated with this type of project will be allowable under the Nationwide Permit process, provided all terms and conditions of the permits are satisfied. Prior to undertaking any activities which will result in discharges of dredged or fill material (including excavation work) into waters of the U.S., authorization or verification of authorization needs to be accomplished to avoid potential violations of the law.

It is suggested on page 4-25, the EIS add a section addressing potential authorization of the project's crossings in accordance with Nationwide Permits 12, 13, 14, 26 and 33. Please find enclosed Fact Sheets for each of these permit types which outline the specific terms and conditions of their applicability. It is also suggested that all pump station locations be assessed for the presence of wetlands and the applicant discussion provided as to potential upland options for those facilities, if needed.

If you have any questions concerning this matter, please contact me at (307) 772-2300. Your file number is 199540110.

Sincerely,


Matthew A. Bilodeau
Program Manager
Cheyenne Regulatory Office

Enclosures



OF WYOMING



8

Jim Gerding, Governor
Dan Claitor, P.E., Director*Department of Transportation*

5300 BISHOP BOULEVARD (82000) P.O. BOX 1708 CHEYENNE, WYOMING 82003-1708

September 21, 1995

Mr. Don Ogaard
Project Manager
Worland District Office
BLM
P. O. 119
Worland, WY 82401

RE: Express Crude Oil Pipeline

Dear Mr. Ogaard:

After reviewing the proposed plan in regard to the WYDOT's transportation system, it is noted that there will be approximately seven highway crossings that can be of some affect. They are as follows:

HIGHWAY

14A
32
16, 20, 14
789

16
26, 20
26, 20

DESCRIPTION

West of Lovell
South of Lovell
West of Greybull
South of Big Horn/
Washakie County Line
Northeast of Worland
Near Hells Half Acre
West of Casper

All work shall be coordinated with the appropriate district office and the utilities program at main headquarters. The first six crossings shall be coordinated with District Engineer, Ken Fink at 568-3400 in Basin, Wyoming. His mailing address is P. O. Box 461, Basin, WY 82410. Any crossings within the Casper area can be handled through District Engineer, Jack Bell at 473-3200 in Casper. His mailing address is P. O. Box 2199, Casper, WY 82602. Filing of special permits will be required at both districts.

All utility work shall be coordinated with Utility Officer, Dave Bryden at 777-4133 in

Response to Comment # 8, WY DOT:

Thank you for the information, and the names of your contact persons. These have been supplied to the project proponent.

Cheyenne. His mailing address is P. O. Box 1708, Cheyenne, WY 82003-1708. All utility crossings must be in accordance with the state's Utility Accommodation Regulation.

This regulation does not allow the granting of a permanent easement but a revokable permit only. This permit will be for the pipe itself with no additional distance granted on either side of it. The area within the highway right of way will remain highway right of way. Also, the pipe owner will be liable for all future relocation costs if the highway is reconstructed.

No open cuts will be allowed within highway right of way. All crossings must be accomplished by approved boring methods.

It also appears there are three potential areas for parallel encroachments. They are as follows:

HIGHWAY

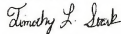
789
789
26, 20

DESCRIPTION

South of Lovell
South of Basin
Numerous places by
Powder River

The Utility Accommodation Regulation does not allow for any parallel encroachment within the highway right of way. The pipe and its right of way must be located outside the highway right of way.

Very truly yours,



Timothy L. Stark, P. E.
Environmental Services Engineer

TLS/mg

cc: Ken Fink, P. E., District Engineer, Basin
Jack Bell, P. E., District Engineer, Casper
Dave Bryden, Utility Officer, Cheyenne

Wyoming State Legislature

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SEP 25 1994

9



SENATE

SENATOR BILL HAWKS
Senate District 29 - Natrona County
P.O. Box 2935
Casper, Wyoming 82602
Committees:
Transportation & Highways
Minerals, Business and
Economic Development

9/25/95

Mr. Don Ogaard
Project Manager
BLM Worland District Office
P.O. Box 119
Worland, WY. 82401

re: Express Crude Oil Pipeline, Draft Environmental Impact Statement (DEIS)

Dear Mr. Ogaard:

Thank you for conducting the public meeting on September 11th concerning the Express Pipeline DEIS. I would like to reduce to writing some of my verbal comments made that evening.

I recognize that the BLM does not set import policy. However, as the DEIS does address the socio-economic considerations, comments as to the deficiency and inaccuracy of the statement are appropriate.

As a Wyoming State Senator, I have an obligation to look to the future of the State, what today's decisions will mean to future generations. To consider the fiscal impact on the State, it's educational system and job opportunities.

The DEIS does not adequately address the near or long term socio-economic aspects to the state. Also, many assumptions are made concerning the outlook for new exploration, production declines, and the need for foreign crude being brought into this market, which are obviously biased on the side of Express Pipeline.

The oil segment of the minerals industry currently employs approximately 10,000 Wyoming citizens. Oil alone accounts for about 25% of the total taxable value of the State. It generated about \$220,000,000 in FY94 in tax and royalty revenue to the State, with education being the prime recipient, along with counties, cities, highways, water development, etc. Obviously, anything that would further depress this industry would have a devastating effect on the economy of Wyoming.

Wyoming is producing 79,000,000 b barrels of oil annually. Wyoming producers are currently being paid varying premiums for certain crude, ranging from \$1.00 to \$4.00 per barrel. These premiums would disappear immediately, coupled with a drop in the posted price of oil. Using 1994 Department of Revenue numbers, for each \$1.00 per barrel decrease in the price of oil, revenues to the State would drop approximately \$10,000,000 per year. Considering that Wyoming is currently facing a major budget deficit this would compound the problem. New exploration would be depressed, the economic life of existing production would be reduced causing the pre-mature abandonment of more wells, leaving even more extractable barrels of oil in the ground, never to be recovered. This would further exacerbate our reliance on foreign imports and worsen our national trade deficit.

Response to Comment # 9. State Senator Hawks:

Please see rewritten Appendix N. Thank you for the data you supplied.

This project flies in the face of Wyoming's attempts to promote its exploration and production activities. In 1995, the Wyoming State Legislature passed legislation to stimulate new exploration, tertiary recovery projects, stripper well production, shut-in wells, and to promote natural gas research. Wyoming is not willing to accept the demise of the oil industry within the State as inevitable.

Contrary to statements in the DEIS, major exploration for new sources of oil is economically viable at the present value of oil, but would not be at reduced prices. With recent technological improvements in 3-D seismic and horizontal drilling techniques, there are very successful drilling programs underway in areas such as the Lodgepole area of North Dakota. 3-D seismic work is also being successfully used in the Green River and Powder River Basins of Wyoming. The current Wyoming rig count is 39, up from a historic low of 20 a few months ago. A drop in the price of oil would assuredly send the rig count tumbling.

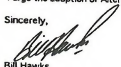
The indirect effects of causing an 80% supply increase in crude volume into Wyoming would include an immediate decrease in sales, equipment, use and fuel taxes. It would result in greater unemployment. It would further the degradation of the infra-structure of the oil industry. To carry this scenario one step further, consider that each dollar spent in Wyoming has a multiplier effect of three.

The temporary employment benefits during the construction period and the property taxes which would be paid on the pipeline are insignificant when compared to total damage which would be done to the Wyoming economy by an over supply of foreign oil, causing a major price decrease.

Under the "No Action Alternative", the adverse market responses which might occur without the Express Pipeline are not substantiated by fact. The adverse market reactions which would occur if Express Pipeline is built are substantiated by fact. There is no justification for approval of this project.

I urge the adoption of Alternative #1.

Sincerely,



Bill Hawks
State Senator, SD-29

cc

Wyoming Congressional Delegation
Members, Joint Minerals, Business and Economic Development Interim Committee
Wyoming State Officials
Michael B. Enzi, Chairman Senate Revenue Committee

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SEP 27 1995

10

PRENALT CORPORATION

625 FIRST INTERSTATE BUILDING
P O BOX 2514
CASPER WYOMING 82602

ADDRESS REPLY TO
P O BOX 2514

September 26, 1995

Response to Comment # 10. Prenalta:

Please see rewritten Appendix N.

a. BLM is aware of the need to encourage domestic oil and gas production, and is currently considering several incentives. Among these are various types of royalty relief for Enhanced Oil Recovery Projects, Wildcat and High Cost Drilling, and Stripper and High Water Cut wells; regulatory streamlining and elimination of duplication in the Unitization and Communitization process, and an Environmental Compliance Self-Certification Program.

Mr. Don Ogaard
Project Manager
BLM Worland District Office
P. O. Box 119
Worland, Wyoming 82401

RE: Express Crude Oil
Pipeline Project

Dear Mr. Ogaard:

Pursuant to the proposed oil pipeline from Wild Horse, Alberta to Casper, Wyoming, this is to advise that from our perspective, as a producer of crude in Wyoming for over 30 years, said pipeline would have a very detrimental affect on oil prices in this region. Our industry which has already been decimated with very narrow profit margins these past ten years, request that this proposal be denied so that our current economic problems do not become worse as a result of this project.

We have attached a copy of a news article from the Casper Star Tribune dated September 25, 1995 which discusses the negative impact that Canadian gas supplies have had on our gas prices and rig count. We firmly believe that if the proposed Canadian crude pipeline is allowed to come into our region, an identical article will probably be written about the Canadian oil supply affect on Wyoming producer prices.

As you are aware the drilling rig count is extremely low and our oil production in this country continues on a steep decline. If we are to have any hope of increasing domestic production, or even staying status quo, it is requested that you make decisions that are positive to our industry giving us stronger cash flows and enabling us to drill more wells.

Thank you for your consideration.

Sincerely,

PRENALT CORPORATION

David W. Klym
David W. Klym
Vice President

DMK:af
Enclosure
cc: Art Compton, Project Manager
Montana Department of Environmental Quality
DMK
JAM

EXPRESS CRUDE OIL PIPELINE DRAFT ENVIRONMENTAL IMPACT STATEMENT

SEP 28 1995

[PLEASE PRINT PLAINLY]

BUREAU OF LAND MANAGEMENT
Comments Name:

Michael Petronis

Address:

I support the Express Pipeline project and recommend permits necessary for its construction be issued.

As long as it is maintained properly (i.e. proper corrod protection, inspections, weld NDT, ~~the~~ line integrity systems, etc.), the pipeline provides a very safe and environmentally "friendly" method of moving large amounts of ~~crude~~ oil from ~~the~~ Canada to U.S. refineries that will be in need of crude oil from other sources in the near future. As the pipelines from the dying Wyoming production area run dry, the Express line would supply these lines and bring them back up to maximum capacity.

In addition the Express line could supply the 3 local refineries with another source of crude oil to ensure their security long into the future.

Finally, this pipeline will provide central Montana and northern Wyoming with some secure, long term jobs for the communities it passes ^{through}.

M/P

Please include me on the mailing list for updates concerning the status of this project. Thanks

Response to Comment # 11, Michael Petronis:

Thank you for your comments.

FLYING J. INC.

333 WEST CENTER P. O. BOX 540180 - NORTH SALT LAKE, UTAH 84054-0180
PHONE (801) 298-7733

September 27, 1995

Mr. Don Ogaard
Bureau of Land Management
P.O. Box 119
Worland, Wyoming 82401

Dear Mr. Ogaard,

I am writing you to express our support for the Express Pipeline project and to provide you with information that will convince you of the need for the project.

The population out west particularly Idaho, Utah and Colorado is sky-rocketing and the demand for petroleum products is following. At the same time crude oil production is in a rapid decline of about 25,000 B/D per year (see attachment #1 & #2). Given these two facts something has got to give. Below I've outlined what we believe justifies the project.

Canadian Syncrude Plants Increase Capacity

The three synthetic crude producers in Alberta plan to increase capacity by about 50,000 B/D at each of their plants. They have large reserves to supply the increase and they need the incremental barrels to improve their economics. At the same time refining capacity has decreased in western Canada with shutdown of several western refineries. This tells us that the synthetic crude will come to the U.S. some way, not matter what.

PADD IV Crude Quality Decreasing Rapidly

Over the last five years crude quality in PADD IV has declined rapidly. API gravity is dropping and sulfur content is increasing significantly more these past five years than the previous ten years (see attachment #3). These high quality domestic crudes can only be replaced by high quality Canadian crudes that are readily accessible. We are currently importing about 90,000 B/D of Canadian crudes. This will continue and must increase to supply the needs of Rocky Mountain refiners. The only way this additional supply can happen is through the Express Pipeline.

U.S. Crude Imports Increasing

The U.S. increases imports of crude each year. Currently we are importing a little over fifty per cent of our crude oil supply. Estimates are we will be importing sixty per cent of our supply in the near future. We believe imports from Canada are much more secure than crude imports from the middle east or Africa. Anything that can be done to shift barrels to Canadian imports and away from off-shore imports ought to be done.

Salt Lake City Refiners are Sweet Crude Refineries

The refineries in Salt Lake City are basically sweet crude refineries. The plants do not have the processing equipment or the flexibility in environmental permits to process high sulfur crudes like those found in much of Wyoming. As a result of the declines we are experiencing, the availability of suitable sweet crude is diminishing.

a The Canadian syncrude plants produce a sweet crude that fits the Salt Lake refiners much better than the Wyoming sour crudes. The availability of these Canadian crudes will provide the feedstock to enable the Salt Lake refiners to keep up with the growing demand for petroleum products at reasonable prices. As a matter of information the Salt Lake refiners supply about seventy five per cent of the motor fuel needs in Utah and about seventy per cent of the needs in Idaho.

Refineries Will Shutdown without Express Pipeline

As crude production declines, supply tightens and crude prices rise in a small local area. As this happens, outlying areas begin to encroach upon our product market area. As crude becomes more difficult to obtain and products are more difficult to market the local refineries can no longer compete and will be shutdown. When this happens, product prices will rise, product supply becomes questionable and fewer refineries are available to respond to our energy needs in this country. This is occurring today with the Diamond Shamrock line into Colorado Springs and the discussions concerning construction of the Olympic Pipeline from the Northwest into Idaho and the CalNev line into Utah.

b Overall we believe if the Express Pipeline is not built, several refineries in Salt Lake will be shutdown. This will raise product prices to consumers in the Rockies, will have a negative impact on our national security and cause oil prices to plummet in the Rockies. If it is not built, the Canadian crude coming into the U.S. will go to other refining regions where the crude will be refined and products shipped back into the Rockies. And if it is not built our dependence on unstable crude supplies will continue to grow.

Response to Comment # 12, Flying J:

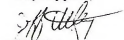
Please see rewritten Appendix N. Thank you for the data you supplied.

a. Even without the Express Pipeline, Rocky Mountain refineries will have access to Canadian crude supply via alternative pipeline routes outlined in the Economic Analysis of System Alternatives to Express, and Appendix M.

b. Some Rocky Mountain refineries face direct competition from refined product pipelines delivering product from refineries with access to low cost crudes. The ability of these Rocky Mountain refineries to compete will be, in part, determined by the price of crude oil available to them. The net price of Canadian crude oil delivered via Express to these refineries will depend on the pipeline's tariffs. Ultimately, Express' tariffs will reflect the pipeline's volume commitments and anticipated throughput volumes. If throughput volumes turn out to be lower than original projections, Express' actual tariffs might end up being higher than its proposed tariffs. Higher Express tariffs might not produce net delivered Canadian crude prices that allow refineries to retain markets facing competition from refined product pipelines.

I would be happy to discuss with you further if you have any questions.

Very truly yours,



Jeff Utley
Refinery Manager

cc: Jim Peacock, Executive Director, Utah Petroleum Association
Rick Robitaille, Executive Director, Petroleum Association of Wyoming
Cliff Dodge, Executive Vice President, Rocky Mountain Oil and Gas Association

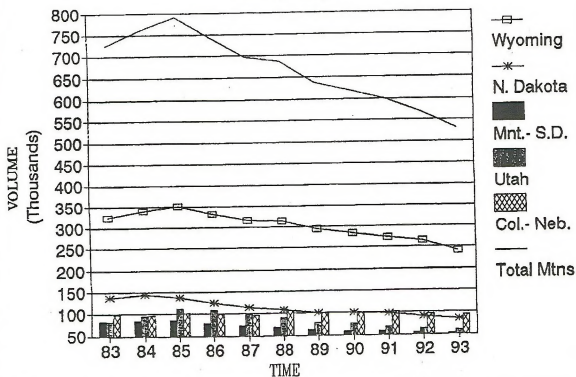
Attachment # 1

Rocky Mtn. Stats

Bbls. / Day

Ref: Petroleum Association
of Wyoming

Independent Petroleum
Association of America



Attachment #2

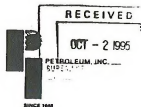
Padd 4 Crude Production Decline

(KBPD)

	1991 Production	91-92 Decline KBPD %	1992 Production	92-93 Decline KBPD %	1993 Production	93-94 Decline KBPD %	1994 Production*
Wyoming	274	9 -3.28%	265	25 -9.43%	240	25 -10.42%	215
Montana	54	4 -7.41%	50	2 -4.00%	48	4 -8.33%	44
Utah	67	1 -1.49%	66	6 -9.09%	60	3 -5.00%	57
Colorado	86	2 -2.33%	84	3 -3.57%	81	0 0.00%	81
Total Padd	481	16 -3.33%	465	36 -7.74%	429	32 -7.46%	397

* 1994 Production to July 31

Source: US EIA Annual & Monthly Reports



13

OFFICE CENTER
301 NORTH MAIN, SUITE 1100
WICHITA, KANSAS 67202-4813
316.261.8200

September 29, 1995

Response to Comment # 13, Petroleum, Inc.

Please see rewritten Appendix N. Thank you for the data you supplied.

Mr. Don Ogaard
Worland District BLM
P. O. Box 119
Worland, WY 82401

Dear Mr. Ogaard:

We have followed the publicity and requests from the owners of the proposed Canadian Express Oil Pipeline from Hardisty Alberta to Casper and are greatly concerned about the impact this will have on our crude oil price for our Wyoming oil production, if approved. Our operating history with Wyoming operations is as follows:

1. Our Company has been operating in Wyoming, both oil and gas, for over 35 years. We currently produce about 1,200 BOPD from operated leases plus share in another 1,100 BOPD of non-operated oil.
2. We maintain offices in both Casper and Gillette with company employees.
3. We paid \$328,203 in Wyoming severance taxes and \$361,784 in County Ad Valorem Taxes in 1994 on our operated leases.
4. About 75% of our oil is considered sour so our posted crude oil price is already low when compared to sweet oil.

It is our opinion if this oil pipeline is approved, the imported oil from Canada will create an over supply of oil in the Wyoming area, thereby probably lowering the oil price for Wyoming production. Any further erosion of our oil price would force us to prematurely abandoned marginal wells. The imported oil would no doubt create an additional problem with our already critical balance of payments on the oil we currently import into the United States.

Mr. Don Ogaard
September 29, 1995
Page 2

We would respectfully urge you to vote no on allowing this pipeline to cross the Federal
Lands

Yours very truly,

PETROLEUM, INC.

A handwritten signature in dark ink, appearing to read "Robert C. Heaton", is written over the printed name.

Robert C. Heaton
Vice President

RCH sf



14

Response to Comment # 14, Gerky:

Please see response to comment # 4.

Oct. 4, 1995

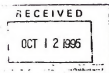
Don Ogden
B.L.M. Wetland District Office
P.O. Box 119
Worland, Wyo. 82401

Dear Mr. Ogden:

I am writing you to state my
opposition for the planned construction
by Ogden Pipeline Inc. of a 34 inch crude
oil pipeline from Wellhead to Casper, Wyo.

I will not give permission or
right of way to have this pipeline
constructed across my land as I feel
it represents a definite hazard to my
property as well as the State of Wyoming.

Sincerely,
Loren & Betty Huber



Pine Mountain Ranch
P. O. Box 2020
Mills, WY 82644

October 10, 1995

15

Bureau of Land Management
Worland District Office
P. O. Box 119
Worland, WY 82401

ATTN: Don Ogaard, Project Manager

Dear Sirs:

a Please make the facts presented on the attached pages an official part of the Environmental Impact Statement and decision-making process concerning the Express Crude Oil Pipeline. We are private landowners that would be crossed by the proposed pipeline between approximately MP482 and MP487 as shown on the DEIS. Though we have made numerous contacts with Express Pipeline they have been unresponsive to the information we have supplied them. As a result Express was denied permission for entry to perform surveys pending legal action (Docket #70805 Seventh Judicial District Court) that we felt would insure protection of our interest. Legal action was dismissed when the project was canceled in 1994, but we are in process of reinitiating that action, which will certainly not be concluded before the comment period expires.

In synopsis, no actual surveys have been conducted between MP482 and 487. We assume that information presented in the DEIS is garnered from EISs on other projects, but if so deletes some significant information contained in those EISs (see attachments for details). Most significantly, the proposed route crosses a unique and critical area (in Sec 11 and Sec 12 T35NR84W) that has been ignored in the EIS. We would like the EIS to acknowledge that the data shown for the area between MP482 and 487 is not actual information obtained from current surveys.

In 1993 we proposed a shift in the pipeline alignment about one mile north (between Hwy. 20-26 and existing railway easement) from about MP478 to MP488 to alleviate both industrial and environmental conflicts, while creating a more accessible right-of-way for the pipeline. Express field personnel agreed that this was indeed a preferred routing*, but Express management was in such a hurry to get on to construction that no minor alternatives to the initial routing would be evaluated. We feel Express has been negligent in evaluating alternatives in small scale areas such as where our problems exist. Because we expect to correct this situation through legal action, we would like to point out that the final pipeline routing will most likely differ from the route as currently shown in the DEIS between MP482 and MP487.

b Finally, the DEIS does not address the final disposition of the three existing pipelines between Lost Cabin and Casper. Will these be abandoned? Has the alternative of using the existing pipelines unused capacity (total unused capacity is currently 180 M barrels per day) been considered as an alternative to building the Express pipeline between these points? We hope the attached Appendix of information is of benefit to you.

Sincerely,

Charles Putman

*Meeting with Ron Olson and Mark Bardwell, of Express Pipeline, October 27, 1993 Casper, WY.
Mr. Bardwell stated that routing to the north was obviously in Express's best interest, and should not be a problem if changes are made prior to making surveys. Thus permission for entry to make surveys was not allowed.

Response to Comment # 15. Pine Mountain Ranch.

a. Please see response to comment # 4.

b. The BLM is not aware of any plans to abandon these pipelines. BLM has no legal authority to specify at what capacity these pipelines should be used. These pipelines, as well as Express, are independent, and to a certain extent competing, business ventures.

Appendix

Environmental Conflicts

Background: Pine Mountain is the dominant geologic formation in the area west of Casper, WY. In lay terms it is the only hill / mountain in an area of about 400 square miles. With an elevation of over 1,000 feet, trees, and abundant wildlife, it is the dominant landscape feature for a 25 mile radius. Since it is the only elevated ground in this area, it yields a more complex drainage problem for the area surrounding it than is normally encountered on Wyoming prairie lands.

Concerns:

- c 1. The proposed route of Express pipeline borders a sensitive watershed activity area (As identified by the BLM's Platte River Resource Area Resource Management Plan Environmental Impact Statement).
- d 2. The Middle Fork of Casper Creek crosses the pipeline route at the west side of Sec 12 (R84W). There have been out-of-control erosion situations at this location, due to attempts of industrial trespassers to create a crossing of the creek. Although dry at sometimes, the creek frequently flows out of its banks. This creates a large flood plain, frequently making much of Sec 11 and portions of Sec 12 totally inaccessible for as much as two - three months of the year. If an emergency occurred requiring access to the line during such flooding it could be impossible. At the very least, damages would be irreparable in this sensitive watershed area, which acts as a detention basin.
- e 3. The only significant Riparian vegetation area within a 25 mile radius (Per the Western Area Power Authority Environmental Impact Statement 1986) would be directly crossed by the proposed Express route. This coincides with the flood plain area discussed in item 2. The Express DEIS does not address this area.
- f 4. Two Black-footed Ferrets sighting locations were noted in this general area during the Western Area Power Administration's 1986 Environmental Impact Study. One of these locations is within Sec 12 very near the proposed pipeline. We do not know what effect this pipeline construction would have, and this is not addressed the DEIS.
- g 5. A slope in excess of 15% would be encountered in Sec 12 on the proposed route. Special considerations would be needed to prevent ongoing erosion in this area, and allow continued maintenance access to the proposed pipeline.

c. The BLM agrees that the proposed Express pipeline route borders a sensitive watershed as identified in the BLM Platte River Resource Management Plan. However, your proposed re-route also borders the sensitive watershed and does not suggest a route significantly distant from the watershed. Additionally, your suggested re-route would move further from other established rights-of-way.

d. Express' evaluations of the Middle Fork of Casper Creek indicates that it is a moderate sized stream subject to varying flow conditions depending on the season. Express proposes completing a bed and lateral scour analysis of the Middle Fork of Casper Creek during the design phase of the project and to take additional steps, if required, to ensure an acceptable crossing. The methodology to complete the analysis is described in Appendix G of the DEIS. Express would consult with the individual landowners near the proposed crossing to glean as much "local expertise" information as possible from experienced land owners.

General construction procedures on steep slopes and across riparian areas are described in the DEIS in Chapter 2 and Appendix B. These procedures were developed based on evaluations conducted by engineering, geotechnical, and environmental specialists familiar with the area. These evaluations took into account the historical conditions in the area. These procedures must be approved by the BLM on public lands in the final Plan of Development document. Any special considerations on private land will be negotiated between Express and the private landowner. BLM specialists would be available to assist landowners on these matters if requested.

e. The impact to riparian vegetation would be short term. Revegetation would be negotiated between Express and the private landowner. Suggested seed mixes for riparian vegetation are described in Appendix B, Table B-6-5. The BLM would provide assistance with possible seed mixes at your request.

f. The mitigation to protect any occurrence of the black-footed ferret along the proposed pipeline route is fully described on pages 4-40 to 4-42 of the DEIS. The pipeline route would be re-surveyed for prairie dog colonies and complexes large enough to potentially support black-footed ferrets. If any of the applicable colonies or complexes are documented along the right-of-way, potential construction impacts would be mitigated in one of two ways. The pipeline route could be slightly altered to avoid the colonies. If any of these colonies could not be avoided, surveys for black-footed ferrets would be conducted during the year prior to construction. If a ferret is found, the appropriate authorities would be notified and the pipeline route would be altered to avoid the specific colony.

g. Appendix B lists the special construction measures that would be implemented on slopes. Your concerns are addressed on page B-51 of Appendix B in the DEIS. Water bars (diversion berms) would be placed typically every 100 feet to direct intercepted runoff away from disturbed areas. Actual spacing intervals would be subject to adjustment during construction activities as required.

Summary:

- h** Pine Mountain contains the most fragile environment of any area within twenty-five miles of it. A pipeline paralleling the existing lines would repeat the same errors committed many years ago before environmental impact was considered, creating an incremental, cumulative impact. The main concerns of watershed / flood plain and steep slope crossings are more severe than normally apparent to those who have not watched this area over a longer period of time. These problems would create construction and ongoing operational / maintenance problems for a pipeline operator in this area. Also, irreparable damage could be caused that would affect this most environmentally desirable area, and riparian habitat.

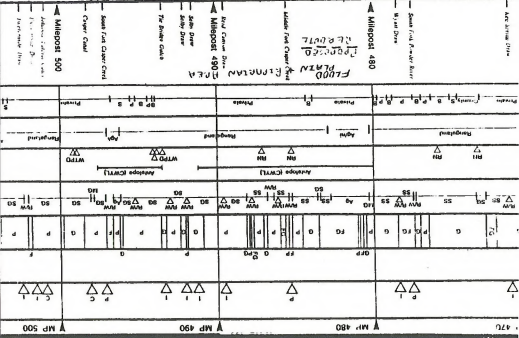
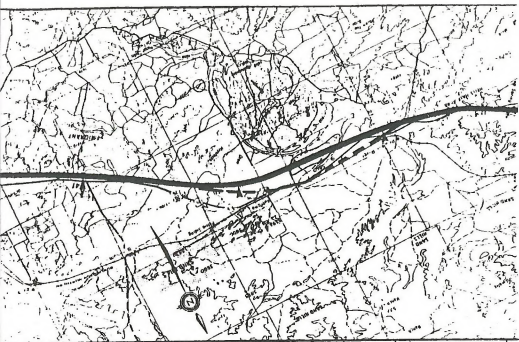
Recommendations

- i** We recommend that the Express pipeline route be shifted north of Hwy. 20-26 starting at approximately MP479, and be routed between Hwy. 20-26 and the existing rail right-of-way to approximately MP486 then flared back to the proposed route. As no cultural or engineering surveys have yet been made in this area*, or right-of-way purchased, the only additional cost to Express would be the addition of about 10 rods of pipeline during construction. This would easily be offset by avoiding the ongoing administrative costs of crossing the Pine Mountain area, and extra construction costs needed to prevent damage in the Middle Fork Casper Creek Flood plain / Riparian area. Please refer to enclosed map for approximate location of proposed reroute. This route would effectively eliminate all concerns stated in these comments at no net cost increase, resulting in long term cost savings and lowered environmental impact.

*Entry for surveys was not permitted withheld by Pine Mountain for reasons stated in cover letter.

h. See responses to comment #s 15 d, 15 e, 15 f., and 15 g.

- i. Both the proposed Express route and your suggested re-route include almost exclusively private lands. Therefore, the BLM will make no decisions regarding routing on private lands (also see Response to Comment # 4). If negotiations with Express or the impending legal actions result in a re-route of the pipeline, a right-of-way could then be considered on those BLM lands involved in the reroute.



W-16

L. M. (Mike) Muetler
Production Manager
Rocky Mountain Region



Marathon
Oil Company

1501 Stampede Avenue
Cody, WY 82414-4721
Telephone 307/587-4961

October 10, 1995

Mr. Don Ogaard
Project Manager
Bureau of Land Management
P.O. Box 119
Worland, Wyoming 82401

Dear Mr. Ogaard:

Marathon Oil Company, as a major producer of crude oil in Wyoming, recommends that "Alternative 1; No Action Alternative", described more fully in the "Draft Express Crude Oil Pipeline Environmental Impact Statement (DEIS)", be selected by the Bureau as the option of choice when final consideration of the DEIS is made after October 16, 1995.

Marathon's position can be summarized as follows:

1.) Marathon is concerned that the socioeconomic analysis, found on page 4-59 (less than 1 full page), is inadequate to allow potentially affected parties to fully evaluate the economic impacts that may result from the Express pipeline proposal. Marathon recommends that the socioeconomic analysis include reference to potential revenue losses to federal, state and local entities that may occur should there be an impact on oil prices associated with the installation of the Express pipeline. A regional oversupply condition may result in depressed oil prices paid at the wellhead, thereby reducing revenues to producers and government entities. By example, considering Wyoming's current oil production (1995), a \$0.25 per bbl. decrease in oil price would result in a loss in Federal royalty revenue of approximately \$850,000 (1995) and a loss of approximately \$3,000,000 (1995) in Wyoming tax and royalty revenue.

2.) Marathon is not convinced that the potential environmental liabilities, outlined in Table S-1, are justified by a demonstrated need. Marathon is aware of numerous announced and/or in progress expansions of existing pipeline infrastructures that appear to be capable of delivering significant new volumes of crude oil to PADD 2 and PADD 4.

Response to Comment # 16. Marathon:

a. Please see rewritten Appendix N. This section discusses need for this project in relation to anticipated refinery shortfalls, and other projects proposed or in progress. However, the BLM feels that it would be inappropriate for BLM to use its right-of-way process to favor one competing business venture over another, most of which require no permit from BLM. Thank you for the data you supplied.

Don Ogaard
Page Two

3.) Marathon is concerned that there is insufficient data in the DEIS to determine if the refineries identified as potential closure sites are vulnerable to closure due to crude oil availability or other unspecified mitigating factors. These factors include regulatory compliance expenditures and/or an inability to convert operations to process multiple, and more accessible crude sources.

a 4.) Marathon notes that in several cases, the DEIS is contradictory in justifying the need for the Express pipeline installation. One such case is found in the markedly different projections of PADD 4 production decline over the next decade. The Express projection of 7.2% is significantly greater than the independent analysis provided by Energy Analysts International of 4-4.4%. This difference is noted as being approximately 80,000 bopd in 2004 in PADD 4 production. Additionally, as noted in the DEIS, crude oil production in PADD 4 for the first 4 months of 1995 actually exceeds 1994 rates. This is likely a result of relatively strong prices received at the wellhead in PADD 4 as compared to the depressed prices noted in 1993 and 1994.

b 5.) Marathon suggests that the Bureau give further consideration to production incentives such as low gravity and marginal well royalty relief as a means to increase PADD 4 oil production utilizing existing wells. These incentives would contribute to increasing PADD 4 supply without incurring significant new environmental liabilities.

In summary, Marathon feels that additional work is required by the Bureau of Land Management in more fully defining the potential socioeconomic impacts of the Express pipeline proposal. Further, as it appears that the existing pipeline infrastructure has responded to the appearance of need for new crude oil sources in PADD 2 and PADD 4, Marathon feels that the DEIS should be re-issued to reflect this response before incurring new environmental liabilities that may not be warranted.

Marathon Oil Company thanks you for the opportunity to present comments on this proposal and looks forward to continuing our relationship, to our mutual benefit, in the future.

Sincerely,

MARATHON OIL COMPANY

L.M. Mueller
L.M. Mueller
Production Manager
Rocky Mountain Region

b. Please see response to comment # 10 a.



PHOENIX PRODUCTION COMPANY

1239 RUNSEY AVENUE, SUITE 100 ■ P.O. BOX 2653 ■ CODY, WYOMING 82414 ■ 307-587-6440 ■ FAX 587-6450

October 11, 1995

Mr. Don Ogaard, Project Manager
Bureau of Land Management
Worland District Office
P.O. Box 119
Worland, Wyoming 82401

Re: Draft Environmental Impact Statement
Express Crude Oil Pipeline

Dear Mr. Ogaard:

This letter is intended as a written summary of the comments I presented at the BLM Public Hearing in Worland on September 12, 1995, regarding the Draft Environmental Impact Statement for the Express Crude Oil Pipeline.

As I stated, this is an emotional issue for Wyoming oil producers, and particularly for Wyoming independent oil producers. We clearly do not believe that the Socioeconomic Issues have been thoroughly examined in the Draft Environmental Statement regarding the Express Pipeline. It is our opinion that further detailed analyses of these issues will clearly show that unregulated imports of crude oil are affecting our Company, our Industry, and our tax base in Wyoming. These growing imports have and will continue to threaten our very way of life in Wyoming.

Phoenix Production Company believes that Alternative 1 - No Action Alternative contained in the draft EIS is the most prudent alternative for the BLM to select. It is our opinion that further detailed studies will show that domestic supplies available, or potentially available, in PAD District 4 plus the pipeline capacity already being added by domestic companies clearly eliminates any long term need for the Express Pipeline. The remainder of my letter will attempt to point out many of the shortcomings of the Express Pipeline.

First a little introduction about our Company. When the major oil & gas companies began to divest of oil and gas properties in the late 1980's, Phoenix began acquiring a selected number of them in the Big Horn and Wind River Basins of Wyoming and in the central Tyler trend of Montana. We have grown to operate 173 oil and gas

Response to Comment # 17. Phoenix:

Please see rewritten Appendix N. Thank you for the data you supplied.

wells with our oil production during July, 1995 averaging approximately 1100 BOPD 60 percent of the production is on Federal and Indian lands in Wyoming. Our Company has grown to 10 employees and 8 part time contractors. This year we will pay severance and ad-valorem taxes of approximately \$600,000.

As you know, Wyoming is the number one producer of Federal onshore oil in the United States and the number two producer of Federal onshore natural gas. Oil and gas royalty and lease bonuses alone generated \$225,000,000 on Federal lands during 1992. Oil production from 11,500 wells averaged 230,000 BOPD in 1992 and has declined to approximately 219,000 BOPD during 1994. Wyoming oil reserves are at the lowest level since year 1950. Approximately 75 % of Wyoming's oil production is low to mid gravity sour crude. Thus the West Texas Intermediate Benchmark Crude Index Price is typically \$3.00 - \$4.00 per barrel higher than what Wyoming producers receive. For example, one of our Federal leases in West Oregon Basin Field received \$10.59 for our barrels produced during July, 1995. Deducting 15% for average Wyoming taxes and 7 % for Federal royalty left \$8.26 gross income per barrel. Operating costs of \$8.44 per barrel then left a net loss of \$0.18 per barrel for the well owners who make the investments and take all the risk. Herein lies a fundamental problem of oil production in Wyoming. It is not only the natural decline of wells that is contributing to the 7.5 % oil production decline shown on Figure 1.3.1 of the EIS, but the decline is also affected by wells shut in or left marginal due to low oil prices and lack of capital investment. As the attached exhibit clearly indicates, the decline of U.S. oil production has been directly influenced by oil price and has been replaced by rapidly rising foreign oil imports. This same situation is occurring in Wyoming.

a

The draft EIS states on page A-24 "the PADD IV area is running out of options to meet it's crude refining requirements and significant new Canadian supply is viewed by Express as the best alternative to satisfy this demand." Phoenix, for the reasons stated above, believes that a stable target oil price of \$20.00 per barrel would significantly reduce the 7.5 % forecasted production decline in PADD IV, and would extend Rocky Mountain crude supplies well beyond the forecasted year of 2002 with the three Rocky Mountain region pipeline projects. Phoenix suggests that the BLM develop some domestic supply development alternatives that are based on reasonable stable price increases.

The draft EIS states on page 4-60 that the Express Pipeline would generate \$6 million annually in ad valorem taxes. Based on the price spread differentials between the West Texas Intermediate Benchmark Crude Index price and Wyoming sour crude prices over the past few years, Phoenix believes that construction of the Express Pipeline will lower Wyoming sour crude prices a minimum of \$1.50 per barrel to Wyoming producers. This would affect approximately 150,000 BOPD of Wyoming production.

a. Please see response to Comment 10a.

Based on an 8 % Wyoming ad valorem tax, this oil price reduction would cost Wyoming oil producers over \$82 million annually and State of Wyoming budgets approximately \$6.5 million annually. Thus the Express Pipeline costs Wyoming citizens annually rather than creating ad valorem revenues. Phoenix believes that the socioeconomic impacts of reduced Wyoming budgets should be presented and analyzed in the EIS. What effects would these tax losses have on Wyoming's Educational System that is primarily dependent on these revenues for their funding?

As recently as December, 1993, Phoenix Production Company shut in 18 producing wells representing a production loss of 132 BOPD. Because of the volatile oil prices the past 5 years, Phoenix has curtailed plans to further develop our properties until price stability is regained. This includes development workovers and secondary recovery projects with a potential to increase estimated oil reserves by 500,000 to 1,000,000 barrels of oil.

Newspaper accounts of the Express Pipeline have indicated that the BLM believes that PADD IV region refineries are operating at marginal profitability. Over the past few years Billings, Montana refiners have spent over \$500 million dollars upgrading their refining equipment. Major improvements have also been made to the Frontier Refinery in Cheyenne, Wyoming. As reported by the May/June, 1995 issue of the Petroleum Independent, 1994 refining profits were \$2.19 per barrel up from 1993. In the same publication, it was reported that refiner's crude acquisition costs have declined for the past 4 years, while wellhead prices for producers are down for the past 4 years. It would appear that it is the PADD IV producers that are operating at marginal profitability rather than the refiners. We would suggest that the BLM consider this issue in the EIS.

The Canadian Government System offers Canadian Companies incentives and certain advantages that provide them the incentive to build an Express Pipeline, for example. Some of these are listed as follows:

1. Sliding scale royalties for the Canadian Producer that is based on both current well rate and current oil price. For example, if world oil prices or well volume drop, the Canadian Producer pays less wellhead royalty. (In Canada this is a combination of their taxes and royalty, and is much less than the typical 30 % paid in Wyoming).
2. The Canadian Government participation in transportation tariffs that lowers their tariffs. This allows Canadian Companies to compete over long distances.
3. The weak Canadian Dollar when compared to the U.S. Dollar gives Canadian Companies strong incentive to sell their commodities in the U.S.

Mr. Don Ogaard (Re: Express Pipeline EIS) p.4

None of the above Socioeconomic issues are contained in the draft EIS.

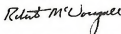
CNN News reported on April 9, 1994 that Canada had a \$10.7 billion dollar trade surplus with the United States during 1993. A report entitled U. S. Oil Import Vulnerability: The Technical Replacement Capability, prepared by Powers Petroleum Consultants for the United States Congress Office of Technology Assessment in December, 1991 made the following statements:

1. "America's financial system will collapse under the weight of the growing imported oil burden as our trade deficit reaches \$96 billion by 1995, \$139 billion by 2000, \$384 billion by 2010, and \$926 billion by 2020."
2. "If America is to avoid becoming a financially bankrupt country, our only option is to substantially reduce the amount of imported oil....."

Again, Phoenix does not believe these Socioeconomic issues have been addressed in the draft EIS.

In summary, Phoenix Production Company believes that there are solutions to the long term crude oil supply problem in the PADD IV district. Moderate, stable oil price increases will encourage U. S. producers, refiners, and pipeline companies to solve our own problems without resorting to foreign imports. We appreciate your consideration of our comments regarding the subject draft EIS.

Very truly yours,

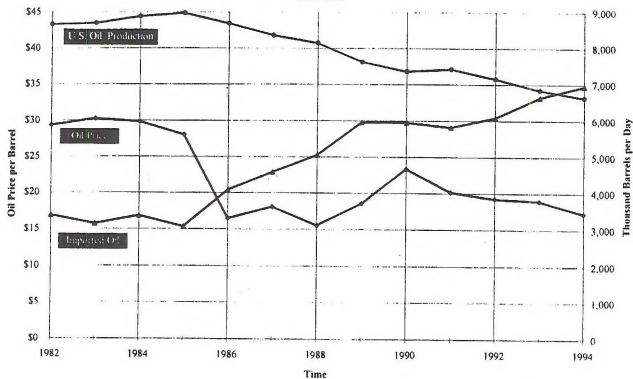


Robert E. McDougall, P. E.
President

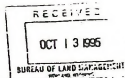
c. It is not within the scope of BLM's decision to establish oil import policy. Under the NAFTA and GATT Treaties, it is likely that imports will continue regardless of whether a particular project is approved or not. Most of the competing system alternatives to the Express pipeline require no permit from BLM. In that sense, the impacts you describe are common to all alternatives.

rem
attach

Oil Price, US Oil Production, & Oil Imports 1982-1994



Phoenix Production Company 09/95



18

Mr. Don Ogaard
Project Manager
Bureau of Land Management
P.O. Box 119
Worland, Wyoming 82401

Dear Mr. Ogaard:

As a resident of Wyoming, I object to the proposed Express pipeline as described in the "Draft Express Crude Oil Pipeline Environmental Impact Statement" and strongly urge the BLM to adopt "Alternative 1-No Action Alternative" as the preferred action.

a I find that the DEIS is inadequate in addressing socioeconomic impacts that I feel will result from the installation of the Express pipeline. I am concerned that, since the DEIS already states that there is a sufficient crude oil supply in this area until the year 2003, large quantities (170,000 barrels per day) of additional Canadian crude oil will depress the oil price in this area and result in a loss of state, county and school revenues. I am also concerned about potential job losses that may be associated with a decreased oil price.

I do not agree that the environmental liabilities discussed in the DEIS are justified by any need for the crude oil supplied by this pipeline. The DEIS states that there are numerous ways to get more oil into this area with existing pipelines, without new environmental disturbances.

I strongly urge the BLM to select Alternative 1 as the preferred conclusion.

Sincerely,

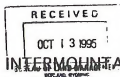
Gary M Lewis

Response to Comment # 18, Lewis:

a. Please see response to comment 16 a.

b. Please see comment letter 17 c. The Canadian government does offer certain incentives to oil producers (see Response 17 c.). Whether these constitute a "subsidy" depends on how one defines the term. The BLM is now considering similar incentives for domestic producers on Federal leases (see Response 10 a.). In any case, it would be illegal under the NAFTA and GATT Treaties to discriminate against the Express project solely because it carries Canadian oil.

b PS. - Besides, the Canadian Oil Industry is heavily subsidized by the Canadian Government making the competition unfair.



INTERMOUNTAIN CONSERVATION DISTRICT

319 South Gillette Avenue, Suite 310
Post Office Box 2577
Gillette, WY 82717-2577
(307) 682-1824

10 October 1995

Reference: Oil Pipeline from Canada into Montana and Wyoming

Dear Mr. Ogaard,

We would like to comment on the Bureau of Land Management's Express Pipeline D.E.I.S.

a It is our opinion that the existing draft supports the Express Pipeline and concludes that a favorable economic impact will be realized. We, however, feel that the impact would be extremely detrimental to our county, state, and region.

b Canada subsidizes its production and exports of oil and gas. Since this influx has greatly affected our local tax base we are concerned. It is the conservation district's charge under state law to protect our local tax base.

[Chapter 16, Wyoming Conservation District Law: 11-16-101 through 134, the Wyoming Conservation District Law, and W.S. 41-8-101 through 126, the Watershed Improvement Districts Law, and W.S. 18-5-306, Subdivision Permits and W.S. 35-11-406, Mine Land Reclamation Law provide for the powers and duties of the conservation districts. Specifically, W.S. 11-16-103: subparagraph (b), which allows for the protection of the tax base, and the protection and promotion of the health, safety, and general welfare of the people in which conservation districts serve.]

a In evaluating the D.E.I.S. we strongly feel that if the Express Pipeline is allowed to be built, Wyoming is going to suffer the impacts of major economic losses: Royalty revenue on Wyoming oil production, jobs directly and indirectly linked to the Wyoming oil and gas industry and the sales and property tax revenues received from people holding those jobs. We feel this broader risk is not clearly addressed by the current D.E.I.S.

b It is our feeling the Express Pipeline violates what N.A.F.T.A. was set up to accomplish. Wyoming producers cannot compete in the market place with heavy tax burdens, royalties, sales, and ad valorem taxes, while the Canadian government is still providing producers subsidies or incentives to come into the U.S. How is this to be deemed "free trade"? You may ask, what does the B.L.M. have to do with N.A.F.T.A.? It is our opinion that an environmental impact assessment must evaluate the whole picture. N.A.F.T.A. has had a major impact on oil and gas producers in the Rocky Mountain region and adding the Express Pipeline will result in an even larger detrimental impact. Therefore, it must be addressed as part of the "whole".

Response to Comment # 19. Intermountain Conservation District:

- a. Please see rewritten Appendix N. Thank you for the data you supplied.
- b. Please see response to letter 18, comment b.



Facts To Consider:

The proposed pipeline will bring an additional 170,000 barrels per day of Canadian crude oil into our regional markets. (Casper Star-Tribune)

a The Draft E.I.S., page S-5, states ... *the facility probably would increase Canadian heavy crude imports into Billings, displacing Big Horn Basin crude volumes that currently move north into Billings.* (Emphasis added.)

Canadian crude oil currently supplies 80 percent of the needs of the Billings refinery area. The pipeline will reduce the 20 percent market share that comes from domestic production and will greatly reduce the gross revenue which producers in the Powder River Basin now receive. (WIPA)

Wyoming's oil production decreased by 18,000 barrels per day during 1994. (WIPA)

b NAFTA not only allows a tax-free import into the U.S., but Canada supports their oil and gas producers with royalty and transportation incentives.

a The positive impacts identified in the D.E.I.S. for the Express Pipeline were related to the construction of the pipeline and would not be long-lived.

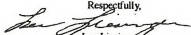
c D.E.I.S. Economic Analysis of System Alternatives to Express does not cover the alternative of purchasing more domestic crude.

a We feel that the D.E.I.S. does not adequately address the issue of local price reductions and resulting cut-backs in exploration and the impact these two areas will have on the state of Wyoming. How many jobs losses will result? How much will taxes have to be raised on other industries: minerals, agriculture, businesses, and individuals to offset these losses?

a We do not feel that the Express Pipeline will benefit Wyoming, Montana, or surrounding areas. We strongly emphasize the need to reevaluate the D.E.I.S. and address the issues that are listed above. We urge you to address these concerns in the Final E.I.S.

At this time, we recommend and see no alternative to, choosing Alternative 1 - No Action Alternative.

Respectfully,



Lee Liesinger
Board Member
Intermountain Conservation District

cc: U.S. Department of Commerce
Governor Geringer
State Land and Farm Loan Office

a. Please see rewritten Appendix N. Thank you for the data you supplied.

b. Please see response to letter 18, comment b

c. BLM cannot specify from what sources refiners purchase supply. Such an Alternative relates to U.S. import policy which is clearly beyond BLM's jurisdiction. Its consideration in the EIS would be merely an exercise in speculation.





335 WEST RIVER CROSS ROAD

P.O. DRAWER 2360
CASPER, WY 82402
(307) 537-8301
FAX (307) 266-0383

10/12/95

Bureau of Land Management
Worland District Office
Attn: Don Ogaard, Project Manager
P.O. Box 119
Worland, WY 82401

Mr. Ogaard,

The following are comments submitted by Belle Fourche Pipeline regarding the proposed Express Pipeline from Canada. Belle Fourche Pipeline operates crude oil pipelines in north-eastern Wyoming and western North Dakota and as such, is an integral part of the movement of crude in the Rocky Mtn Area and from Canada to the Rocky Mtn Area.

After reviewing the EIS document for Express pipeline, we fully agree that the Rocky Mtn area crude production has fallen and will continue to fall to the point where the area will be a net importer of crude oil. With Canadian crude production increasing, logically Canada will be a growing source of crude oil into the Rocky Mtn area. We also fully agree that without sources for additional, competitively priced crude oil, the area refiners will not survive in business, being displaced by product pipelines.

Our comments, however, focus around the fact the Express Pipeline is not needed to keep the area refiners supplied with crude oil for the next 15 to 20 years. The current crude oil pipeline infrastructure, including projects already under construction, has sufficient capacity to meet crude oil needs for the next 10-15 years. The EIS even acknowledges that current pipeline capacities are adequate through year 2002 (p. S-5). Further increases in the capacities of existing pipelines and shifts in crude movements will satisfy crude oil needs for 15 to 20 years.

The existing crude oil pipelines in the Rocky Mtn (PADD IV) area have recognized the need for additional Canadian imports and have taken significant steps to meet that need. Express Pipeline has, in the EIS document, underestimated the capacity of the existing pipelines to import additional Canadian crude supplies. Attachment 1 lists the pipeline projects which will supply about

Response to Comment # 20, Belle Fourche:

Please see response to comment # 16 a.

50,000 bbl/day more Canadian crude to PADD IV, some of which have been announced since the EIS was prepared.

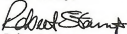
Express Pipeline also intends to deliver crude to the Midwest (PADD II) through the existing Platte Pipeline to Wood River, IL. Here again, Express pipeline is not needed. Several projects have been done or are planned to bring additional crude supplies to the Midwest from the Gulf Coast. Attachment 2 lists the projects intended to bring additional crude into PADD II.

In summary, 40,000 bbl/day of the total pipeline capacity of 160,000 bbl/day into PADD IV from Canada is unused now. Moreover, an additional 50,000 bbl/day due to expansions of existing pipeline capacity has already been committed and is scheduled for completion in November 1996.

Further, existing call on Rocky Mtn crude will decrease because of the planned pipeline capacity expansions into the PADD II from the Gulf Coast and Canada.

According, it is obvious that Express Pipeline is simply not needed and we strongly recommend Alternative 1 - No Action.

Very truly,



Robert Stamp
Belle Fourche Pipeline

Attachment 1

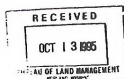
At present the following projects are under construction or implementation:

1. Cenex Pipeline is building a 16" line from Cut Bank, MT to Laurel, MT. This will import 65,000 bbl/day of Canadian oil into the Billings area.
2. Amoco and Conoco have entered into a partnership to construct 75 miles of 12" pipeline from Billings to Elk Basin, WY. This will transport 40,000 bbl/day of Canadian oil through the existing Conoco and Amoco pipelines to the Casper, Salt Lake City, Cheyenne and Denver areas.
3. The pipeline network from Edmonton, Alberta to Salt Lake City comprised of 7 companies, has offered a discounted tariff rate for crude oil imports to Salt Lake City. This discount, set at 21%, is intended to offer the Salt Lake refiners Canadian oil at more competitive price.
4. The link between Portal Pipeline and Interprovincial Pipeline in North Dakota will bring approximately 50,000 bbl/day into North Dakota and Minnesota. While this does not come directly into PADD IV, it will displace a lik amount of crude to PADD IV that previously went to PADD II.

Attachment 2

The following projects are being implemented or planned to increase crude supplies to PADD II from both the Gulf Coast and Canada:

1. Mobil's reversal of a line from Beaumont, TX to Oklahoma will bring an additional 80,000 bbl/day from the Gulf Coast to PADD II.
2. Planned conversion of Trunkline Pipeline from gas to crude oil would move some 300,000 bbl/day additional crude from the Gulf Coast to PADD II.
3. Reversal of Interprovincial's pipeline from the east coast of Canada to the Sarnia, ONT area would add 160,000 bbl/day of crude supply to PADD II.
4. Proposal by Interprovincial Pipeline to increase capacity for crude imports into the Midwest. IPL will add some 120,000 bbl/day of capacity to their existing 1,500,000 bbl/day shipments of Canadian crude to the Chicago and Detroit areas.



21

Mr. Don Ogaard
Project Manager
Bureau of Land Management
P.O. Box 119
Worland, Wyoming 82401

Response to Comment # 21-93; 104-132:

Identical form letters. Please see response to comment # 16 a.

Dear Mr. Ogaard:

As a resident of Wyoming, I object to the proposed Express pipeline as described in the "Draft Express Crude Oil Pipeline Environmental Impact Statement" and strongly urge the BLM to adopt "Alternative 1-No Action Alternative" as the preferred action.

I find that the DEIS is inadequate in addressing socioeconomic impacts that I feel will result from the installation of the Express pipeline. I am concerned that, since the DEIS already states that there is a sufficient crude oil supply in this area until the year 2003, large quantities (170,000 barrels per day) of additional Canadian crude oil will depress the oil price in this area and result in a loss of state, county and school revenues. I am also concerned about potential job losses that may be associated with a decreased oil price.

I do not agree that the environmental liabilities discussed in the DEIS are justified by any need for the crude oil supplied by this pipeline. The DEIS states that there are numerous ways to get more oil into this area with existing pipelines, without new environmental disturbances.

I strongly urge the BLM to select Alternative 1 as the preferred conclusion.

Sincerely,

David R. Barker



Hanover Irrigation District

P.O. Box 965
Worland, Wyoming 82401

94

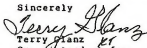
15 October 1995

Attn: Don Ogaard
Bureau of Land Management
P. O. Box 119
Worland, Wyoming 82401

Dear Mr. Ogaard:

In reference to the proposed express crude oil pipeline. We understand the pipeline would cross both the Lower and Upper Hanover Canals north of Worland. Our principle concern is that irrigation water is not disrupted or shut down during our irrigation season between April 1st through October 15th.

Sincerely


Terry Ganz
Superintendent for
Upper and Lower Hanover Canals

TGrt

Response to Comment # 94, Hanover ID:

The BLM and Express share your concern about not disrupting irrigation water flow. The following text has been added to the Crossings of Irrigation Canals section on page 2-42: "Express has proposed boring all canals along the route unless conditions would render boring not feasible. If soil conditions at the time of construction do not allow for boring, and there is flow in the canal, Express proposes to divert the flow beyond the excavation so that no disruption of flow would occur".

RECEIVED

OCT 15 1996

Kenneth D. Wagner, P.C.
 Attorney at Law
 111 West Second Street, Suite 305
 Casper, Wyoming 82601

DEPT. OF LAND MANAGEMENT
 8-2222-1000



TEL. (307) 244-6507 FAX (307) 244-1624

October 13, 1995

Mr. Don Ogaard
 Project Manager
 BLM Worland District Office
 P. O. Box 119
 Worland, WY 82401

Re: Express Crude Oil Pipeline
 Draft Environmental Impact Statement (DEIS)

Dear Mr. Ogaard:

I am writing this letter of comment regarding the referenced proposal on behalf of my client, Larry Wagner, a long time local farmer in the Worland area.

Larry Wagner owns and/or operates a farm north of Worland located between Project M.P. 376.00 and M.P. 377.0 (3750+00 to 3810+00). His farm consists of approximately a square mile of prime irrigated agricultural lands producing row crops (sugar beets, beans, corn), malt barley and alfalfa.

After reviewing the referenced DEIS, we are quite concerned about the potential surface disturbance and disruption of critical farming operations including irrigation supply ditches, irrigation patterns and runoff or drainage patterns. The proposed pipeline construction will diagonally traverse Mr. Wagner's section of land a distance of approximately 6,000 feet. The current proposed construction will disrupt either the direct primary irrigation flow or the drainage pattern to virtually his entire farm.

The scheduled timing of the construction (July through October, 1996) will be even more devastating to Mr. Wagner's farming operation. A disruption of the irrigation patterns for even two or three days during a critical period will cause stress and possibly irreparable damage to growing crops. The DEIS states that the surface disruption period for any one location will be between 4 and 8 weeks:

The adverse environmental and economic affect of this proposed project on Mr. Wagner's land and farming operation are unacceptable.

Response to Comment # 95, Wagner:

a. This statement refers to the direct disturbance caused by construction. The BLM recognizes that it will take longer to reestablish vegetation, both natural and agricultural crops. Page 2-33 states "at most locations, construction of the pipeline would typically involve four to eight weeks between initial disturbance of the land and final re-contouring and restoration of the right-of-way. Construction can be expected to advance at an overall rate of approximately 1.5 to 2.0 miles per day." Compensation for any loss of crops or irrigation patterns will be negotiated between Express and the individual land owner.

Mr. Wagner makes the following suggested alternatives to avoid the problems outlined above:

- b
- (1) Re-route the pipeline to avoid disturbance of prime agricultural lands, particularly Mr. Wagner's lands.
 - (2) If this pipeline project is approved as proposed, Mr. Wagner will expect adequate compensation including but not limited to the following:
 - (a) The estimated net profits from his entire farming operation for the year of construction to be computed by taking the average of the last three (3) years' net profits from the same farming operation. Mr. Wagner will leave the farm in "soil bank" for the year of construction.
 - (b) For the first year after the year of construction, 50% of net profits average computed in paragraph (2)(a) above reduced to a per acre figure for each acre actually disturbed by the pipeline project.
 - (c) For the second year after the year of construction, 20% of net profits average computed in paragraph (2)(a) above reduced to a per acre figure for each acre actually disturbed by the pipeline project.
 - (3) Schedule the 8 week construction period so surface disturbance occurs after harvests are completed and before ground preparation begins for the next planting season. Although this alternative will be the least disruptive, it will still interfere with fall ground preparation activity. Mr. Wagner will expect adequate compensation including but not limited to items (2)(a) and (2)(c) above.

If alternative (2) or (3) occurs, it will be absolutely essential that original critical contours be restored so delicate irrigation and drainage flows are re-established. Mr. Wagner will demand bonding to be in place to assure that this rehabilitation is done correctly and in a timely manner without cost to him.

If we are going to allow a foreign corporation to build pipelines across our prime agricultural lands so it can sell foreign oil to our refinery markets in competition with our domestic oil industry, they should pay for the damages caused by their project. Additionally, our prime agricultural lands should receive the same protection (if not more) from potential disruption and damage as the fauna and flora on publicly owned lands.

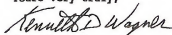
h. The BLM could identify no feasible alternate routes which avoid impacts to agricultural lands. Any practical reroute merely shifts the impacts to other landowners.

c. The BLM agrees that fair compensation should be made to affected landowners. However, compensation and any bonding required is a matter for negotiation between the landowner and Express. The BLM would not be involved in these negotiations. Any disputes would be resolved under applicable state law.

Mr. Don Ogaard
October 13, 1995
Page 3

Please give these comments and observations your serious consideration.

Yours very truly,


Kenneth D. Wagner

KDW/js

cc: Larry Wagner
c:\wpwin\wgagar.lry\oggaard.ltr



October 13, 1995

Mr. Don Ogaard
BLM Project Manager
Bureau of Land Management
P. O. Box 119
Worland, Wyoming 82401

Ref: BLM Draft EIS No. 950371 (Express Pipeline), 60 FR 163,
pp 43810-43811

Dear Mr. Ogaard:

Phillips Petroleum Company (Phillips), a major refiner in Utah and a substantial refined products marketer in the states of Utah, Colorado, Wyoming, and Idaho wishes to express its support for the construction of the Express Pipeline to move crude oil from Hardisty, Alberta, Canada to Casper, Wyoming. We encourage BLM to approve the public lands right-of-way grant required for construction.

a [Statistics from the Energy Information Administration show that in the year 1993, Canadian crude oil imports into PADD IV were 90,000 bpd. That same movement in 1994 is reported at 117,000 bpd. In the same period, crude oil movements to PADD 11 from PADD IV fell approximately 11,000 bpd. The fact is that PADD IV, historically a net exporter of crude has become, and will continue to be, crude deficient. Production is declining in all producing states. Wyoming production, which accounts for more than half of that of the district, is projected to fall at an annualized rate of over 7.5 percent. Between 1988 and 1993 PADD IV crude oil production declined at an average rate of just over 5 percent annually.

At a rated capacity of 25,000 bpd, Phillips' Woods Cross refinery represents almost 17 percent of the refining capacity in the state of Utah. As such it is an important element in the economy of the state and region. Its basic crude slate is sweet crude oil (< 0.5 percent sulfur). With falling local production and little or no oil directed drilling underway, imports are the only way Phillips will continue to be a viable economic contributor. Further, PADD IV is projecting growth in both population and the demand for refined products.

Response to Comment # 96, Phillips:

Please see rewritten Appendix N. Thank you for the data you supplied.

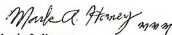
a. The PADD IV decline rate cited in the letter is higher than is likely to occur over the forecast period. For instance, recent estimates of Wyoming decline rates are below 4.5%. The anticipated crude deficit in PADD IV is not likely to materialize as quickly as it would at a decline rate of 7.5%. Moreover, replacement crude volumes from Canada could be supplied by other projects (see also MDEQ Response to Comment 12b.).

The crude oil production to meet this demand is available in Western Canada, primarily Alberta, which makes it readily available to PADD IV. The area's total supply of conventional light crude oil (> 30 degrees API), in 1994 is reported at 921,000 bpd, and almost 70 percent of that volume can be classified as sweet (< 0.5 percent sulfur). In addition, this volume is augmented by the production of significant and growing amounts low sulfur synthetic crude oil.

b Express Pipeline, in our view, represents an opportunity to acquire access to the necessary volumes of crude oil that will allow Phillips and other Salt Lake City refiners to operate on an equal competitive footing with other refining centers.

Please contact me at (801) 299-6605, or T. V. Rankin at (801) 299-6650, if you would like to discuss Phillips' comments or desire additional information concerning the significance of the Express Pipeline project to our refining operations.

Yours truly,



Mark A Haney
General Manager,
Woods Cross Business Unit
Phillips Petroleum Company

b. Even if the Express Pipeline project is built, the resulting economics, given the net delivered cost of Canadian crude to Salt Lake City area refineries, might not place these refineries on an equal competitive footing with other refining centers (see also MDIQ Response to Comment # 12, part 2).

MAH/ale



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

RECEIVED

REGION VIII, MONTANA OFFICE
FEDERAL BUILDING, 301 S. PARK, DRAWER 10096
HELENA, MONTANA 59626-0096

OCT 13 1995

97

Ref: 8MO

October 12, 1995

Bureau of Land Management
Worland District Office
Att: Don Ogaard, Project Manager
P.O. Box 119
Worland, Wyoming, 82401

Re: Express Crude Oil Pipeline
Draft Environmental Impact
Statement

Dear Mr. Ogaard:

In accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the Environmental Protection Agency, Region VIII, Montana Office (EPA) has reviewed the Express Crude Oil Pipeline Draft Environmental Impact Statement (DEIS).

The U.S. Department of Interior, Bureau of Land Management (BLM), and the Montana Department of Environmental Quality (MDEQ) have analyzed potential impacts of a 24 inch pipeline to be constructed and operated by Express Pipeline Inc., (Express) for the transport of Canadian crude oil from Wild Horse on the Montana-Canadian border to Casper, Wyoming, a total of 515 miles. The BLM must decide whether or not to issue a right-of-way easement for the crossing of 97 miles of public lands administered by the Bureau of Land Management (BLM), or the Bureau of Reclamation. The MDEQ is the co-lead agency for the DEIS, in compliance with the Montana Environmental Policy Act and Montana Major Facility Siting Act.

Three alternatives were analyzed including Alternative 1, No Action; Alternative 2, the action proposed by Express; and Alternative 3, the Modified Action Alternative, which includes modifications to the proposed action by Express such as restrictions on timing for construction across rivers and streams, construction techniques across rivers, and construction near raptor nests, key fisheries spawning habitat, and big game winter range. The BLM's preferred alternative is the Modified Action Alternative. The MDEQ has not identified a preferred alternative.

The EPA concurs with some of the project modifications included with Alternative 3 such as boring beneath the Yellowstone River and synchronizing construction with seasonal wildlife needs, and restricting stream crossing construction to the low flow period from August 1 to November 15, and further restricting crossing of nine Montana streams with brown trout fisheries to the period from July 15 to October 1.

a We are concerned about the installation of a casing pipe around the pipeline crossings of major perennial rivers since the DEIS suggests (pages 4-80 and 4-81) that this casing may increase the probability of an oil spill at or near a river or stream, since air and moisture accumulation between the casing and pipe may aggravate pipe corrosion. We are trying to get information from other EPA offices regarding casing of pipelines. We note that pipeline casing at major river and stream crossings is included as a recommended Alternative 3 modification. However, until we obtain further information we would suggest that activities that may increase the probability of spill should not be implemented.

b The EPA suggests that an individual 404 permit be considered for authorization of the dredging and filling activities in waters of the United States for the entire project. An integrated comprehensive 404(b)(1) environmental analysis of all Express pipeline crossings of rivers, streams, and wetlands would be preferable to piecemealing 404 authorizations between nationwide permit and one individual permit. It may be appropriate for 404 administrative reasons and differing State requirements, however, to keep Montana and Wyoming 404 permitting activities separate (i.e., individual Montana and Wyoming 404 permits). We suggest that you contact the Corps of Engineers regarding appropriate 404 permitting procedures.

c The EPA also has environmental concerns about the serious potential impacts to surface and ground waters that would result from spills or leaks of petroleum product to the environment. We believe that industry state-of-the art pipeline leak detection equipment and valves should be incorporated into the pipeline alternatives.

d The EIS disclosed that ancillary facilities would be needed to support construction and operation of the pipeline. These included ground based communication sites, permanent roads accessing sectionalized valves, temporary roads for access during construction, permanent roads accessing the pipeline, and powerlines feeding pump stations. These facilities were not evaluated for site-specific impacts because many locations, lengths, and designs are undetermined. The DEIS did not provide an adequate disclosure of anticipated effects. The impact from these ancillary facilities would be significant and should be addressed in the FEIS.

Response to Comment # 97, EPA:

a. The BLM did not select every sub-alternative of the Modified Proposed Action in its identification of a Preferred Alternative. The BLM did select the Wildlife Timing provisions, and deferred judgement on the others. Regarding stream crossings, the State of Montana has a significant role in this process and the BLM wants to coordinate the decision-making process with the co-lead agency. The BLM shares your concerns regarding the Pipeline Casing sub-alternative.

b. In an effort to conduct an integrated and comprehensive analysis of all stream crossings in Montana, DEQ invited all affected local, state, and federal agencies to participate in on-site inspections of all perennial streams and those streams with designated floodplains. The Corps declined to attend these on-site inspections for various reasons. DEQ continued without the participation of the Corps because we feared loss of suitable behavior to conduct field work to finalize necessary information for State of Montana decisions to be made on the affected stream crossings. This information is summarized in Appendix O.

c. Leak detection and emergency procedures are discussed in pages 4-78 through 4-80 of the DEIS. The agencies believe that these represent the best available technology in this area and should minimize the probability of a spill, or the impact if one occurs. Additional information concerning the sensitivity of the leak detection system is given in response 97 p.

d. The disturbance of pump stations and valves are described on pages 4-49 and 4-50 of the DEIS. The total permanent disturbance because of pump stations, valves, and permanent access roads is described as approximately 20 acres on page 4-49. The proposed locations of pump stations are described on page 2-23. The proposed transmission lines from tap points to the pump stations are shown in Appendix R on Figures R-1 through R-5. Appendix R also presents a general discussion of impacts (mostly land use and visuals) associated with such transmission lines.

e The discussion of wetlands mitigation measures in the DEIS did not describe measures to compensate for the estimated 37 acres of impacts to wetlands. National Wetlands Policy provides for a goal of "no net loss" of the Nation's remaining wetlands, and a long-term goal of increasing the quality and quantity of the Nation's wetlands resource base. Mitigation efforts directed at providing compensation for unavoidable impacts to wetlands should be described.

Our more detailed comments, questions, and concerns regarding the analysis, documentation, or potential environmental impacts of the Express Crude Oil Pipeline DEIS are enclosed for your review and consideration as you complete the Final Environmental Impact Statement (FEIS).

Based on the procedures EPA uses to evaluate the adequacy of the information in the EIS and the environmental impacts of the proposed action and alternatives, the DEIS for the Express Crude Oil Pipeline DEIS will be listed in the Federal Register in category EC-2 (environmental concerns, insufficient information). This category indicates that EPA has identified environmental impacts that should be avoided in order to fully protect the environment. Also, the EIS requires additional resource information in order to fully assess environmental impacts that should be avoided.

The EPA appreciates the opportunity to review and comment on the DEIS. If we may provide further explanation of our concerns please contact Mr. Steve Potts of my staff in Helena at (406) 449-5486 ext. 232. Thank you for your consideration.

Sincerely,



John P. Wardell,
Director
Montana Office

Enclosure

cc: w/enclosure

Bill Geiss/Arlene Butler, EPA, Denver, 8WM-EA
Bob McInerney, COE, Helena
Richard Gorton, COE, Planning Division, Omaha
Chandler Peters, COE, Cheyenne, Wyoming
Art Compton, MDEQ, Helena
Steven Pilcher, MDEQ-WQD, Helena
Steve Oddan, USFWS, Billings
Jim Knoy, EPA, Denver, 8WM-ER

e. The impacts to wetlands would be temporary, during construction only. With proper rehabilitation, there should be no net loss. Construction in wetlands would be according to the procedures dictated in the Corps of Engineers 404 nationwide permit. The general wetlands construction techniques are described in Appendix B.

SUMMARY OF KEYING DEFINITIONS

ENVIRONMENTAL IMPACT OF THE ACTION

LO--LACK OF OBJECTIONS

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC--ENVIRONMENTAL CONCERNS

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

EO--ENVIRONMENTAL OBJECTIONS

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU--ENVIRONMENTALLY UNSATISFACTORY

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CDO.

ADEQUACY OF THE IMPACT STATEMENT

CATEGORY 1--ADEQUATE

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

CATEGORY 2--INSUFFICIENT INFORMATION

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new, reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

CATEGORY 3--INADEQUATE

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussion are of such magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 109 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CDO.

*from: EPA Manual 1440, "Policy and Procedures for the Review of Federal Impacting the Environment."

EPA COMMENTS ON EXPRESS CRUDE OIL PIPELINE DRAFT ENVIRONMENTAL
IMPACT STATEMENT

BRIEF PROJECT OVERVIEW:

The DEIS analyzes potential impacts of a 24 inch pipeline to be constructed and operated by Express Pipeline Inc., (Express) for the transport of Canadian crude oil from Wild Horse on the Montana-Canadian border to Casper, Wyoming, a total of 515 miles. The BLM must decide whether or not to issue a right-of-way easement for the crossing of 97 miles of public lands administered by the Bureau of Land Management (BLM), or the Bureau of Reclamation. The Montana Dept. of Environmental Quality (DEQ) is the co-lead agency for the DEIS, in compliance with the Montana Environmental Policy Act and Montana Major Facility Siting Act.

The pipeline that would include five pump stations (3 in Montana, 2 in Wyoming), numerous valves, and a meter station to initially transport 172,000 barrels per day (BPD) of crude oil. With three additional pump stations the capacity could ultimately increase to 280,000 BPD. The ultimate destination of the crude oil, produced in Alberta, Canada, would be refineries in Wyoming, Colorado, Utah, Kansas, Oklahoma, Illinois, Ohio, Kentucky, and Tennessee via existing pipelines.

Through most of Montana (305 miles) and the for the first 120 miles in Wyoming, the pipeline would be placed immediately adjacent to the certified route for the Altamont natural gas pipeline. This route was certified by the Federal Energy Regulatory Commission in 1991. At Lost Cabin, Wyoming the pipeline would deviate from Altamont's route and parallel other existing pipelines to its terminus in Casper.

The pipeline would cross 43 perennial rivers and streams including the Milk River, Sage Creek, Missouri River, Arrow Creek, Wolf Creek, Sage Creek, Judith River, Musselshell River, and Yellowstone River, Clarks Fork of the Yellowstone, in Montana and the Shoshone River, Greybull River, Big Horn River, and the South Fork Powder River in Wyoming.

Three alternatives were analyzed including Alternative 1, No Action; Alternative 2, the action proposed by Express; and Alternative 3, the Modified Action Alternative, which includes modifications to the proposed action by Express such as restrictions on timing for construction across rivers and streams, construction techniques across rivers, and construction near raptor nests, key fisheries spawning habitat, and big game winter range. The BLM's preferred alternative is the Modified Action Alternative. The DEQ has not identified a preferred alternative.

COMMENTS:

RIVER/STREAM/WETLAND CROSSINGS

1. We concur with the project modifications included with Alternative 3 such as boring beneath the Yellowstone River and that construction be synchronized with seasonal wildlife needs and that stream crossings be constructed during the low flow period from August 1 to November 15, and construction of the crossing of nine Montana streams with brown trout fisheries to the period from July 15 to October 1.

It is not clear to us, however, why directional drilling techniques are only proposed in the Modified Action Alternative for the Missouri River and Yellowstone River crossing? Conventional trenching methods appear to be proposed for all other river and stream crossings. As noted in the DEIS (page 2-9) open cutting of a trench through a river crossing may require a wide ditch since the side walls of the ditch are likely to be unstable in alluvial material. Such a trench could have substantial short-term effects on water quality and fisheries due to greatly increased sedimentation from the construction process.

While we realize that directional drilling is more complex and more costly than conventional trench techniques it appears that other surface waters may also have values worthy of protection that may justify use of directional drilling techniques to reduce adverse effects of sedimentation. We recommend that consideration be given to directional drilling of the pipeline crossings of other perennial streams that support cold water-salmonid fisheries that are sensitive to sedimentation effects. From the information presented in the Chapter 3 Tables 8 and 10 and the section on "Aquatic Life" (pages 3-64 to 3-68) we recommend that consideration be given to using the directional drilling technique on the Judith River, Rock Creek, Clarke Fork Yellowstone River, Shoshone River, Big Horn River, and Greybull River. Perhaps directional drilling should be most seriously considered for the Clarke Fork Yellowstone and Shoshone River crossings.

2. We also believe extra precautions should be observed with the Musselshell River and Shoshone River crossings in light of the location of the Ryegate, Montana water supply intake approximately 10 miles below the pipeline crossing, and the water supply wells for the Town of Lovell, Wyoming.

We note in regard to the Shoshone River crossing that it is stated that the Town of Lovell, Wyoming is located 0.3 miles downstream of the pipeline crossing (page 3-38), and the Town of Lovell obtains water supply from five shallow wells in the unconsolidated Shoshone River alluvium (page 3-47). Also, the location of the proposed Shoshone River pipeline crossing in

f. Each river and several stream crossings were given consideration for directional drilling. In all cases except the Milk, the Missouri, and the Yellowstone Rivers, and Arrow Creek, the potential for impacts with an open-trench crossing, if conducted during a low-flow period, did not warrant the increased complexity and expense of directional drilling. Depending on location, directional drilling could decrease or increase costs (see Appendix O, Table O-1 on page O-5). There are other problems associated with directional drilling besides cost. It is not technically feasible in certain substrates such as those with large cobbles or fractured bedrock. Short-term construction related impacts are likely to be greater in upland, non-riparian areas from directional drilling and noise impacts may last two weeks rather than 3 days. These impacts must be weighed against those of a relatively short-duration open-trench, longer term loss of riparian forest, and greater disturbance to the streambed and streambanks. Additional discussion of stream specific impacts is presented in Appendix O.

g. An Express representative contacted an official for the Town of Lovell, Wyoming on November 17, 1995. The official indicated that the five water supply wells previously used for miscellaneous purposes are now abandoned and on longer in use. The town now receives all of its water supply from the Shoshone Municipal Pipeline, which transports water from the Buffalo Reservoir near Cody, Wyoming. The text on pages 3-47 and 3-48 has been changed to indicate that Lovell no longer uses water from shallow wells.

The Town of Ryegate withdraws water from the Musselshell River through an infiltration gallery, which is a horizontal well in the alluvium below the depth of the riverbed. The text on page 3-38 has been modified to reflect this information. The pipeline crossing is located 22 river miles upstream from the location where Ryegate withdraws its water. Therefore, the chances of sedimentation produced during construction, when the flow will be low, affecting the town's water supply are small.

The MDEQ does recommend, and Express concurs in its general construction procedures, that block and check valves are installed on either side of the river to reduce the potential for a pipeline rupture to affect water quality on the Musselshell River that may affect a public water supply. Protection of water supply sources from an oil spill will be discussed in detail in the Spill Prevention, Containment and Control Plan (SPCCP), which is currently being finalized. Construction would not be permitted until the SPCCP is approved by appropriate federal, state and local agencies.

relation to the location of the Town of Lovell's shallow water supply wells should be shown. Is the pipeline crossing upstream or downstream of the Town's water supply wells? By what distance?

g What is the potential for adverse effects to Lovell's water supply from construction activities or from leaks during pipeline operations? If the pipeline crossing is upstream of the Town's wells would it be appropriate to consider relocating the crossing so that it would be downstream of the Town's wells?

Similarly, what is the potential for adverse effects to the water supply of the Town of Ryegate, Montana from the Musselshell River pipeline crossing above the Ryegate water supply intake?

3. We note (page 2-54 and page 4-15) that the State of Montana (i.e., MDEQ) would require that the pipeline would be constructed across 22 Montana perennial streams during low flow periods (i.e., August 1 to November 15) to minimize the mechanical action of water over the trench and reduce the amount and transport of sediment downstream. Additionally Montana (i.e., MDFWP) would require that river and stream crossings be completed between July 15 and October 1 for nine brown trout fisheries, the Judith River, Ross Fork, Musselshell River, Valley Creek, Yellowstone River, Rock Creek, North and South Forks of Bluewater Creek, and the Clarks Fork Yellowstone River to protect spawning periods for brown trout (page 4-35).

h The only river/stream crossing construction timing limitation that we found for Wyoming streams was the restriction on the Big Horn River crossing from July 15 to October 1 to protect channel catfish and sauger (page 4-39). (Although there is some discussion on page 4-35 of the need to construct the crossings of the Greybull, Big Horn and Nowater Rivers after July 15th this does not seem to be required). Have the Wyoming DEQ and Wyoming GFD and the Corps of Engineers Wyoming Office reviewed the pipeline river/stream crossings in Wyoming and determined that no other timing limitations or mitigations are needed?

i 4. In regard to the time period during which stream crossings would be constructed it is stated in the next to last paragraph on page 2-54 that, "construction of at least some of these crossings may not occur during Express' proposed construction window." This language is unclear. We are concerned that this could mean that convenience of construction for Express may mean that construction will take place outside the August 1 to November 15 or July 15 to October 1 low flow and/or brown trout spawning periods, and thus, take precedence over necessary protection of water quality and fisheries resources.

h. Additional requirements recommended by the Montana DEQ are given in Appendix O. After further consultation with MDFWP, we find no evidence of brown trout in Valley Creek and the text has been revised to reflect this. Likewise, the North and South Forks of Bluewater Creek do not contain brown trout at the crossings site and the text has been revised to reflect this fact. Copies of the DEIS were sent to the State of Wyoming, several Game and Fish offices, and the Cheyenne Regulatory Office of the Corps of Engineers. Please see letter 7.

i. Sentence 4 on page 2-54 is confusing. The sentence "Thus, construction of at least....." has been deleted.

I We believe the water quality and fisheries resource agencies (i.e., MDEQ, MDFWP, USFWS) should identify and establish the pipeline construction timing limitations necessary for protection of water quality and fisheries, and Express should be required to abide by those construction scheduling limitations. We also agree that it would be reasonable that if Express desires to carry out stream crossing construction on the nine brown trout fishery streams after October 1, that MDFWP should survey the stream to determine if an extension could be made for construction without damaging active brown trout redds (page 4-39).

I Would the combined timing limitations of the MDEQ and MDFWP for stream crossings in Montana mean that the construction period for the nine Montana brown trout streams would be from August 1 to October 1? (Since the MDEQ wants all Montana stream crossings to be constructed during the period from August 1 to November 15, and MDFWP wants crossings for nine brown trout fisheries to be carried out from July 15 to October 1.)

j 5. We are concerned about the impacts of proposed blasting of bedrock that may be required for conventional trench crossings of the Yellowstone River, Judith River, Shoshone River and Greybull River (page 4-35). We suggest that extra efforts be made to move fish away from blast areas prior to blasting.

k 6. The discussion on page 4-80 and 4-81 suggest that installation of a casing pipe around the pipeline crossings of major perennial rivers may actually increase the probability of an oil spill at or near a river or stream, since air and moisture accumulation between the casing and pipe may aggravate pipe corrosion. We are trying to get information from other EPA offices regarding placement of casing around pipelines. However, until we get further information it would appear that activities that may would increase the probability of a spill or leak should not be implemented.

I 7. It is stated (page 4-24) that during construction through wetlands there would be increased potential for the trench to act as a drainage channel. Have wetland drainage impacts of the trench been estimated and included in the 37 acres of wetland impact identified in Table 4, Comparison of Alternatives? Impacts to wetlands from the trench acting as a drainage channel should be determined.

m 8. The discussion of wetlands mitigation measures on pages 4-25 and 4-26 while describing methods to avoid and minimize impacts did not describe measures to compensate for the unavoidable impacts to wetlands. National Wetlands Policy provides for a goal of "no net loss" of the Nation's remaining wetlands, and a long-term goal of increasing the quality and quantity of the Nation's wetlands resource base. Mitigation efforts directed at

j. See page 4-36, paragraph 3. The impact to fish from detonations would be reduced by using smaller detonations first to scare the fish away from the blast site. Furthermore, it is not a foregone conclusion that blasting would be required at the sites listed. At recent crossings of the Yellowstone River near Billings, no blasting was required.

k. The BLM shares this concern. Although this idea was raised during scoping, analysis in the DEIS suggests that it is largely unproven and may pose unintended risks. Neither the BLM or DEQ will require pipeline casing on river crossings.

l. The increased potential for the trench to act as a drainage channel would be a temporary construction-related impact. During construction, drainage areas over the trench would be plugged. The short construction period across wetlands would ensure that no significant, long-term drainage would occur.

m. See response to comment c.

providing compensation for unavoidable impacts to wetlands should be described.

The goal of wetlands mitigation should be to replace the functions and values of unavoidably lost wetlands. The function and value of wetlands that will be impacted by the Express Pipeline Project should be assessed and identified. The wetland types crossed by the pipeline route shown in Table 16 (page 3-54) provides useful information that can be used to prepare a wetland mitigation plan that will replace the loss of these wetland types.

Different wetland types provide different functions; for example a scrub-shrub wetland may provide excellent wildlife habitat, while an emergent wetland along the shores of a reservoir or river may provide good fisheries rearing habitat and flood storage. While most wetlands provide some valuable function, each provides a somewhat unique mixture of functions and values. For example, scrub-shrub wetlands that may be inundated should not be compensated for by the creation of emergent wetlands. Scrub-shrub wetlands generally provide good nesting and feeding habitat for a variety of wildlife species. The species that utilize these scrub-shrub wetlands could not simply relocate to the newly created emergent wetlands; rather there would be a loss of wildlife habitat for those species that depend upon the scrub-shrub areas. Instead the applicant must assess the functions and values of the wetlands to be lost, and compensate for these particular functions and values.

An acceptable wetland mitigation plan that provides for adequate replacement of wetland functions and values lost as a result of implementation of the Express Pipeline Project should include consideration of both direct, indirect, and cumulative effects. It should contain a statement of goals, a monitoring plan, long-term management/protection objectives and a commitment to conduct additional work, if required, to meet the goals of the plan.

EPA believes that criteria to measure the success of wetlands mitigation efforts should be developed. There should also be a clear commitment to take corrective actions if the pre-established criteria for success are not being met. These corrective actions will more than likely involve revegetation and/or additional efforts at successfully establishing wetland hydrology, and/or potentially carrying out wetland mitigation work at other sites. These corrective actions should be mandated by conditions placed in the 404 permit.

Also, wetland mitigation should occur at least concurrently with project impacts, and if possible, in advance of project impacts. This is needed to reduce temporal losses of wetlands functions, and to reduce the uncertainty over whether mitigation

will be successful in offsetting wetland losses.

n 9. In regard to the discharge of test water from hydrostatic testing (page 4-14). Perhaps there may be opportunities to discharge test water into wetland areas that may enhance wetlands. We suggest consideration or evaluation of potential discharge sites that would allow enhancement of the water sources of wetland areas. Site-specific analyses would have to be conducted to assure that discharge of such water would have a beneficial effect.

O 10. It is stated (page 4-25) that the Express Pipeline would be constructed under the Nationwide Section 404 Permit program, although an individual permit would be required for the Yellowstone River crossing. The EPA suggests that an individual 404 permit should be considered for authorization of the dredging and filling activities in waters of the United States for the entire project. An integrated comprehensive 404(b)(1) environmental analysis of all Express pipeline crossings of rivers, streams, and wetlands would be preferable to piecemealing 404 authorizations between nationwide permits and one individual permit. It may be appropriate for 404 administrative reasons and differing State requirements, however, to keep Montana and Wyoming 404 permitting activities separate (i.e., individual Montana and Wyoming 404 permits).

LEAK DETECTION

1. We are concerned about the risk and potential for a spill of petroleum product into the environment, and the serious environmental impacts that would accompany such a spill. While much information is included in Chapter 4 regarding pipeline safety and reliability we believe that additional information should be presented in the FEIS regarding proposed pipeline leak detection equipment and monitoring systems,

P It is stated (page 4-79) that a small leak (1% of the flow at a point) would take 24 hours or longer to detect. We note that 1% of the pipeline capacity of 172,000 BPD amounts to 1,720 BPD, whose discharge to the environment for a 24 hour period or longer could cause significant adverse impacts. How long would it take a small leak of 1% or less of the flow to be detected? Small leaks may be difficult to detect and allow many thousands of barrels of petroleum product to discharge into the environment before a leak is detected.

The CEQ regulations require disclosure of the adverse environmental impacts that cannot be avoided should the proposal be implemented and that appropriate mitigation measures be included (40 CFR 1502.16 and 1502.14). Accordingly, the anticipated effectiveness of the proposed leak detection system and spill response procedures should be discussed more

n. Comment included. Text added to end of first sentence in paragraph 3 on page 4-14* or wetlands if close to the discharge location.

o. See response to comment 3.

p. The first paragraph on page 4-79 has been rewritten to further clarify the SCADA system.

thoroughly. The estimated volumes of crude oil potentially spilled and released to the environment near sensitive areas such as rivers and stream crossings in the event of a leak or rupture (before shut-off with the proposed SCADA and leak detection system) should be disclosed, particularly impacts of a small leak which can discharge more petroleum product to the environment than a large leak due to difficulties in detection of small leaks.

Serious impacts to surface and ground water resources would result in the event of a spill/leak. These impacts, described in Chapter 4, should dictate that the industry state-of-the-art for leak detection equipment and valves be incorporated into the selected alternative. All possible actions to reduce the probability of a spill/leak occurring, the magnitude of a spill/leak, and to reduce or mitigate the adverse consequences of a spill/leak should be taken.

We recommend that the Supervisory Control and Data Acquisition System (SCADA) provide continuous 24-hour-per day pressure and temperature compensated mass balance and analysis for the pipeline. Pump station pressure, temperature, flow measurement, and vibration monitoring equipment and remote control automatic shut off capabilities in the event of a leak should be described in more detail. High sensitivity shut-in leak tests should be performed at least at monthly intervals to identify the possible occurrence of a very small leak. On the ground inspection of the pipeline using portable hand held hydrocarbon monitors should also be carried out minimally on a biannual basis.

2. We are pleased that mainline block valves and check valves would be located upstream and downstream of major river crossings (4-78). However, the FEIS should clearly state which river and stream crossings are considered to be major.

SPILL RESPONSE

1. It is stated (page 2-47) that Express would develop an emergency response and contingency plan for operating the pipeline system, and a Spill Prevention, Containment and Control Plan (SPCCP) before construction would begin (page 4-17). We believe that at the very least a detailed outline of the Emergency Response and Contingency Plan and SPCCP should be prepared and available for review with the FEIS. The Plans should include detailed information on spill response procedures to be followed and actions to be taken in the event of a spill. They should identify the specific procedures to mitigate potential adverse environmental impacts (i.e., on surface water, ground water, soils, fisheries, wildlife, recreation, human health and safety), and discuss the location of equipment and expertise available to each length of the route to respond to

q. Comment included. The following text has been added to the last paragraph after the second sentence on page 2-37:

*Construction periods to cross rivers and streams would vary according to the size of the river or stream as follows:

- major rivers (100 feet wide or greater) would last one to two weeks,
- major stream (10 to 100 feet wide, average depth greater than two feet) would last about two to six days depending on whether blasting would take place, and
- minor stream (width less than ten feet, average depth less than two feet) construction would be complete in one to two days.

These construction times reflect the total time from equipment set-up to backfilling the trench and clean-up. The actual time "in the water" would be less in most circumstances.

r. An expanded SPCCP outline is included in the FEIS.

environmental cleanup. Special conditions such as weather impaired and cold weather response procedures should be included. These Plans, or at a minimum detailed outlines, should be available for review with the FEIS to allow their adequacy to be assessed (see CBO's regulations implementing NEPA, 40 CFR 1502.14(f) and 1502.16(h)). We recommend including the Plans, or detailed outlines, as an appendix to the FEIS.

CUMULATIVE IMPACTS

1. Impacts associated with the expansion of production at Casper's existing refineries due to the new crude supply did not appear to be evaluated. These impacts would include air quality and increased emissions, transport of additional refined products overland, hazardous spills, changes in local economies and social characteristics if the refineries increase shifts and output, etc.

GENERAL

1. We appreciated inclusion of the Table 1 of Permit, Approval, and Consultation Requirements for the Express Pipeline. This Table provides a comprehensive listing of permitting, approval and consultation requirements.

2. The EIS disclosed that ancillary facilities would be needed to support construction and operation of the pipeline. These included ground based communication sites, permanent roads accessing sectionalized valves, temporary roads for access during construction, permanent roads accessing the pipeline, and powerlines feeding pump stations. These facilities were not evaluated for site-specific impacts because many locations, lengths, and designs are undetermined. The DEIS did not provide an adequate disclosure of anticipated effects. The impact from these ancillary facilities would be significant and should be addressed in the FEIS.

3. We believe the ground water monitoring plan discussed on pages 4-12 and 4-13 should be prepared and completed as much as possible as part of the environmental analysis for the EIS. This Plan will identify water supply wells located within 100 feet of the proposed pipeline. We believe that knowledge of the presence or absence of public and private potable ground water supply wells near the proposed pipeline route may be important for a reasoned choice among route alternatives. It may be that route modifications would be appropriate to move the pipeline further from such potable use aquifers. The environmental impacts of the alternatives and the means to mitigate adverse impacts should be revealed in the EIS, and should be known to the decision maker before the Record of Decision is prepared.

s. The oil shipped by Express would go to refineries in Wyoming, Utah, and the Wood River District. No expansions of these operations are planned as a result of Express. They are currently operating below capacity.

In most cases, the affected refineries are operating below permitted capacity. The Express crude oil deliveries may enable these refineries to operate close to or at their already permitted levels. Any changes in emissions would be permitted through the individual state's permitting process.

t. Thank you for your comment.

u. See response to comment 97 d.

v. In order to protect groundwater resources, which are vital for public and private supply systems, Express would conduct pre- and post-construction monitoring of any wells or springs within 100 feet of the right-of-way. After the right-of-way has been approved, Express would determine whether any wells or springs are within 100 feet of the right-of-way. The survey would be conducted by checking state well records, agency records, and personal communication with private landowners. Baseline field surveys of each well or spring would include a visual estimate of flow and water clarity, and field measured temperature, electrical conductivity, and pH. The results of these surveys would be filed with the agencies before construction commences. After construction is complete, the wells and springs would be surveyed again for the same parameters to determine if construction has caused any impacts on the ground water.

In the unlikely event that post-construction monitoring shows that construction had an adverse effect on the groundwater, Express would provide for an emergency potable water source and for the necessary repairs, replacement, and/or relocation of the affected facilities to restore the supply system to its former capacity. Before construction begins, protocols would be developed for determining how compensation would be provided to landowners in the event damage does occur as a result of pipeline construction, including measures that would be taken if it were not technically possible to restore a well to its original capacity and not possible to install a new well.

W 4. We are pleased to see that Express will employ environmental inspectors to ensure that appropriate techniques to minimize environmental impacts are implemented, and that daily meetings will be held between the environmental inspector(s) and Express construction representative to discuss environmental implications of the construction, compliance and possible impacts of the day's construction (page 4-74).

5. We note that seven federally listed threatened and endangered species and one Category One species potentially occurs along the proposed route (page 4-39). We are pleased to see that a Biological Assessment will be included in the FEIS, and that the impact analysis in the DEIS shows either no affect or minor effects (on pallid sturgeon and mountain plover).

w. Thank you for your comments. The Biological Assessment has been submitted to the USFWS state offices in Montana and Wyoming.



Response to Comment # 99, STEA:

Please see rewritten Appendix N. Thank you for the data you supplied.



STEa

SCIENCE, TECHNOLOGY
AND ENERGY AUTHORITY

October 12, 1995

Patrick Neary, Director

P.O. Box 3295
Laramie, WY 82071-3295
(307) 766-6797
FAX: (307) 766-6799

Mr. Don Ogaard, Project Manager
Bureau of Land Management
Worland District Office
P O Box 119
Worland, WY 82401

Dear Mr. Ogaard,

On September 11th, I was asked to speak on behalf of Governor Gerioger at the Canadian Express Pipeline Public Hearing in Casper. I have enclosed a copy of my report to the Governor on what I said at that hearing. To summarize, there are grave concerns that the draft Environmental Impact Statement does not adequately examine the long-term socio-economic impacts of the pipeline project. Until the EIS addresses these concerns, it is felt that the BLM has not justified their choice of Alternative Three.

I appreciate the opportunity to provide my comments to BLM and look forward to your response.

Sincerely,

Patrick T. Neary
Executive Director

express to ogaard 1

COPY



To: Governor Jim Geringer
Fr: Pat Neary
Re: Canadian Express Pipeline Public Hearing
Date: September 12, 1995

SCIENCE, TECHNOLOGY
AND ENERGY AUTHORITY

Patrick Neary, Director
P.O. Box 3295
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My comments are summarized as follows:

"I am here this evening representing Governor Jim Geringer, the Science, Technology and Energy Authority, and the Department of Commerce. My remarks will be rather informal, but a written comment will be made by each party prior to the October 16th deadline. I will confine my remarks to the socio-economic impact analysis of the DEIS, and will not make a recommendation, at this time, concerning the three alternatives for action.

We have grave concerns about the possible negative socio-economic impacts of the Express Pipeline. The Governor's primary concern is related to the possible loss of state revenues and, since 72% of educational revenues are generated by the minerals and energy industries, loss of educational revenues. In an era of fiscal crises and budget deficits, revenue from the oil industry, even if it is declining, is still a critical part of our state revenues. Any adverse impact to petroleum revenues will have significant negative impact to the state, education, and local governments.

I have several points I would like to make, and I will refer to specific sections and page numbers. I may be redundant on some of the points, such as those by Senator Hawks, but that will serve to emphasize them and to add an additional perspective.

I, Section 3-89 and 3-102 I'd like to point out the inconsistency between the economic analysis on these pages. On page 3-89 you state that "Cattle ranching, irrigated farming, mining and the petroleum industry provide most of the employment and income." In contrast, on page 3-102, you point out that the services sector is the largest percentage of all industry groups in Wyoming at 29.8 percent. This is a minor point, the major point, which was missed, is that employment and income are not the most important economic consideration here. Given Wyoming's tax structure, it is tax revenues which are at issue. The

employment and income figures are more a reflection of social impacts than economic impacts on any large scale. You need to perform an economic impact analysis based upon the possible loss in state petroleum revenues.

2. Section 4-59 You speak of the temporary impacts resulting from the construction of the project. I'm not going to address those issues, as I think that they are minor. You also note, in the second paragraph under Socioeconomic that during the public scoping process a respondent "believed that the import of Canadian crude oil via the proposed pipeline could hinder the exploration for future petroleum resources and cause a continuation of declining crude oil production levels in Wyoming and Montana." We believe that same thing, and wonder why this concern was not addressed in the analysis.

You also state on the last sentence on the page that "The project would have a long term beneficial effect on local property tax revenues." And go on to note that "Express has estimated that its proposed pipeline would generate approximately \$.1 million in Wyoming." I note that you are taking the companies estimate instead of doing your own, but the important point here is that you do not calculate the net effect of the loss to local revenues of petroleum severance and ad valorem taxes due to the effect of cheap Canadian crude in eliminating Wyoming production from these counties. We believe that the net effect would be negative, not positive as stated.

Further, you state in the final paragraph of that section on page 4-60, that "All socioeconomic impacts would be generated by construction of the proposed pipeline. No additional socioeconomic impacts related to operation of the pipeline are expected." We believe that you are missing the point completely here. The effects of constructing and operating the pipeline are insignificant in comparison with the potentially devastating effects of the flood of cheap Canadian crude competing in the very same markets that Wyoming crude does. This pipeline has the potential to totally eliminate Wyoming exploration and production, with, again, devastating effects on our state and educational revenues, as well as local revenues.

3. Section 4-68 We question your basic assumptions on this page. First, you state a current price of \$18 to \$20 per barrel of oil. "At this present value of oil, major exploration for new sources of oil is not economically viable." That statement is absolutely incorrect. I would like to point out to you that we have many companies exploring for oil, now, today, at those prices. Advances in exploration

technologies and techniques are finding new deposits in older fields, often at shallower depths than previous exploration, which may result in a cheaper cost of production. We at STEA are funding studies by the Institute for Energy Research at the University of Wyoming in the Laramide Basin, and elsewhere in Wyoming, that may result in new characterizations of non-conforming oil and gas formations, and anomalously pressured reservoirs. Many Wyoming companies are now working with them to re-develop older fields and recover bypassed oil and gas.

In addition, recent studies have indicated that Wyoming has the fourth largest undeveloped reserves of oil and gas in the United States. We know the oil and gas is there, we know we can develop it economically. The question becomes - Will subsidized Canadian oil and gas destroy the markets for Wyoming feedstocks?

4. Also Section 4-68 We take exception to the basic assumption expressed in your statements in the final paragraph of that page "Without a significant increase in oil prices which would probably launch to a major exploration effort, it can be reasonably concluded that the import of Canadian crude oil via the proposed Express Pipeline should not directly affect oil production in Wyoming and Montana."

We strongly disagree with this statement. Again, exploration is ongoing in Wyoming at current oil prices. Canadian crude will compete directly with Wyoming crude in regional markets. The fact that Wyoming oil production is declining is not material to the argument. We seek to lessen and stop that decline. In fact, Wyoming production is declining partly because of the competition already existing from Canadian imports. This proposal suggests that we increase the amount of Canadian crude - and states that it will not directly affect our production! I fail to see the logic. This pipeline will directly hurt exploration and production.

5. Appendix A-8, A-11, Table 1.3.2, etc. The proposal specifically indicates that the Canadian Crude will compete in markets PADD II and IV, the midwest and Rocky Mountain areas. These are the markets where Wyoming crude is sold. Therefore, the Express Pipeline will deliver cheaper Canadian Crude into these markets in direct competition with Wyoming crude, and at a lower price.

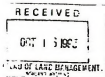
6. Future Revenue Loss - I would like to present to you a preliminary and very superficial scenario for the possible impact on revenues to Wyoming. Please understand that I am not a petroleum economist and that these figures are for the purposes of illustration and discussion only. For example, oil production in

Wyoming today is approximately 80 million barrels. The report indicates that premiums paid by refineries to producers will most probably be eliminated by the competition from the Canadian Crude. These premiums vary from \$1 to \$3 per barrel. Using for illustration purposes only a \$2 per barrel figure. If all oil was affected and a \$2 per barrel premium lost, the total loss to the producers would be \$160 million. At an approximate 12.5% tax rate, \$20 million in revenue to the state would be lost. Educational revenues would be affected by a \$14 million loss. Over two decades, at no further reduction in production (which we must reasonably assume) or other variables coming into play, the state will lose \$400 million dollars, and school revenues \$280 million.

7 Appendix B-9 you note that, in contrast to all of your dire predictions about Wyoming crude production declining steadily on an annual basis, that "in the first four months of 1995, this production decline was not sustained and the rate of production actually increased over the 1994 levels." The complex interactions of pipelines are detailed in the remainder of this section, I note that statements such as (B-10, 3) These pipeline projects will significantly reduce incentives for Midwest buyers to access Canadian crude through the AEC-Platte route." And in 4, discussing the possible sale or conversion of the Platte pipeline to natural gas, "This will limit AEC Midwest market access if Amoco pipeline is the only long haul transportation route remaining from the Rockies to the Midwest." And, Section 5 page B-11, "... it is unlikely that AEC Midwest destination volumes will materialize on a consistent basis. Thus, the AEC project will most likely have to depend on Rocky Mountain refinery markets for its base level throughput."

Given these statements, how can the analysis possibly conclude that the Canadian Express pipeline will have not direct affects on Wyoming production?

In conclusion, we believe that the Canadian Express pipeline will have significant negative impacts upon Wyoming in socioeconomic terms. We ask that the socioeconomic portion of the DEIS be given greater attention in reaction to these comments.



100

Response to Comment # 100, 88 Oil Co.

Please see response to letter 16, comment a.

October 13, 1995

Bureau of Land Management
Worland District Office
101 South 23rd Street
Worland, Wyoming 82401

Attention: Don Ogaard
Project Manager

Re: Proposed Express Crude Oil Pipeline

Gentlemen:

Express Pipeline, Inc. is proposing to construct a 24-inch crude oil pipeline from Hardisty, Alberta, to Casper, Wyoming, for the purpose of importing approximately 172,000 barrels of Canadian crude. The stated purpose of this line is to supplement an anticipated shortage of crude supplies in both Pad II and Pad IV.

It is Eighty-Eight Oil Company's position that construction of this line is unnecessary. Our reasons for this position are as follows:

1. Shortfall of crude supply in the Pad II region can and will be supplied through proposed changes on Interprovincial's existing line into that area.
2. Shortfall of crude supply into the Pad IV region will be taken care of through programs that are already in place through pipelines that are also in existence. There is already crude scheduled through the Wascana-Texaco Butte system into the Salt Lake area commencing in October of this year. This is a direct result of the recent formation of a joint tariff from Edmonton to Salt Lake City and will take care of any immediate refinery shortfalls in the Salt Lake City area. Furthermore, Cenex is already constructing a line from Canada into the Billings area which will provide an additional capacity to the Rocky Mountain region, as well as the Amoco-Conoco venture to share capacity off the Glacier Amoco pipeline which is already in existence.

These volume increases on existing domestic lines will provide additional capacity equivalent to the Express Pipeline proposal.

Bureau of Land Management
Worland District Office
Attention: Don Ogaard
Project Manager
October 13, 1995
Page Two

3. Construction of the Express line could provide instantaneous quantities of supply to Pad IV in excess of its needs creating a downward pressure on domestic crude oil prices in that region. The existing lines in the Pad IV area will expand capacity as demand is required and will thus alleviate the potential of the flooding of the market from time to time.
4. Utilization of lines that are already in place in the Pad IV region avoid the environmental damage of additional line construction.

To reiterate, Eighty-Eight Oil Company sees no need for another pipeline into either the Pad II or Pad IV regions and are opposed to any such venture. If you have any questions or any further elaboration, please do not hesitate to contact us.

Very truly yours,



J. S. Beasley
Operations Supervisor

JSB:jc

Speak Up For Wildlife Foundation and
Box 84006
PO Market Mall
Calgary, Alberta
T2A 5C4

Rocky Mountain Ecosystem Coalition
Rm 921
8 Ave. S.W.
Calgary, Alberta
T2P 1G5

16 October 1995

Don Ogaard
Project Manager
BLM Worland District Office
PO Box 119
Worland, WY
U.S.A. 82401

Dear Mr. Ogaard:

RE: Express Crude Oil Pipeline Draft Environmental Impact Statement

The Speak Up For Wildlife Foundation and the Rocky Mountain Ecosystem Coalition are both organizations recognized under Canadian Federal legislation. Both have a long standing history of involvement with the oil and gas industry in Canada and the United States. Both are intimately involved with the Canadian part of the Express pipeline with RMEC registered as an official intervenor in the yet to be announced joint National Energy Board / Canadian Environmental Assessment agency public hearing into that pipeline proposal.

There are serious deficiencies in the Express Crude Oil Pipeline DEIS which we will briefly outline and which we expect will be addressed in the FEIS. They are listed below in point form with the appropriate DEIS page number.

1. Twenty-six (26) refineries apparently control or influence the demand and placement of crude oil in the Rocky Mountains. page s-3, 1-6.
Question 1 a? What is the capacity of each of these refineries and how much Canadian oil does each now use.
- a 2. The statement "social benefits" is used (page 2-13) and employment and income are discussed (page 3-93).
Question 2 a.? If NEPA requires a consideration of all benefits, how many man years of employment do the 26 refineries provide and what is the annual payroll for each refinery?

Response to Comment # 101, Speak Up/Rocky Mtn.

a. Please see rewritten Appendix N.

2-4

2

- a
- 2 b. What changes can be expected if the Express line is completed?
- 2 c. How many man days/ months of employment will pipeline construction provide?
- 2 d. Of the immediate above (pipeline employment) what part, and how man days/ months will consist of Montana and Wyoming residents?
- 2 e. What are the long term employment figures (man months or years) to be provided by pipeline operation?
- 2 f. Contrast the employment on the Montana / Wyoming portions of the pipeline (construction) with that on the Alberta portion?
- b
3. On page 4-84 the DEIS defines cumulative impacts. The determination of project incremental impacts requires a foundation impact assessment of "past, present and reasonably foreseeable actions".
- Question 3 a? Provide a cumulative inventory of the "past, present, and reasonably foreseeable" human activities, including agricultural, oil and gas exploration and development, recreational, road building and transportation (railways, major highways) activities impacting on each segment of federal, state and private land along the proposed route.
- Question 3 B? What impact have these activities had on each ecosystem and each wildlife population along the route, and how has this affected the diversity and viability of each of these populations?
- c
4. The definition on page 4-84 points out that 2 or more individual effects acting together may be considerable and/or increase other environmental effects. We agree but fail to see adequate deliberation and analysis of the issue. For example,
- Question 4 a? Would the Express line in Montana be an issue if the Alberta Express line were not proposed? We point out that without the Alberta line, the Montana line and its impact would be a moot point. Why does the DEIS not consider the full impact of the entire line, since it is obvious one would not proceed without the other?
- d
5. A significant level of upstream activity will occur, in the form of exploration and exploitation of ecosystems in Alberta, in order to provide oil for the Express Line in Montana. Hundreds, possibly thousands, of such individual actions will take place

b. The cumulative effects analysis determined that the proposed pipeline would not cause significant cumulative effects because it is short-term in nature. However, upon reclamation, none of the individual projects you mention would interact with the pipeline operations. Therefore, the BLM feels that such an inventory would provide no new useful information. Cumulative impacts have been determined to result from potential pipeline construction for four separate projects at annual intervals. Therefore, the cumulative effects concentrates on similar disturbances which may occur every year for up to four years.

c. Under the NAFTA and GATT Treaties, it is probable that Canada will continue to export oil regardless of whether any individual project is approved or not. Even if the Express U.S. segment is not approved, a pipeline from Hardisty to Wildhorse could have an independent utility. Other projects could be proposed from Wildhorse to U.S. markets. Routes could be easily found which would not cross public lands and therefore would not require a permit from the BLM. For these reasons, BLM believes there is insufficient "federal handle" to extend NEPA jurisdiction to the portion of the Express pipeline constructed by Express Ltd. in Alberta, Canada. The impacts of the Alberta portion of the pipeline are analyzed and disclosed in accordance with the Canadian Environmental Assessment Act which is incorporated by reference (see DEIS page 1-8).

d. Your questions 5 and 6 are related. The BLM does not agree that the presence of system alternatives to Express is irrelevant. It bears directly on question 5, because the impacts of oil production in Canada is likely to be the same whether any individual project is built or not. Furthermore, any decisions regarding the potential impacts of future Alberta oil exploration and production will be made in accordance with the Canadian environmental Assessment Act. In that sense, these impacts are common to all alternatives. The BLM also wishes to emphasize that most of these system alternatives require no permit from BLM.

3-4

3

dependant solely on the Montana Express line? It is obvious that the Montana Express line, while with substantial environmental impacts and risks, is but one link in a long chain of events, all of which have significant environmental impacts.

Question 5 A? The cumulative impact assessment is woefully inadequate and we suggest it be expanded to meet the Council of Environmental Quality Guidelines and the ecological intent of NEPA and the Canadian Environmental Impact Assessment Act.

d

6. The No Action Alternative (page 4-40, 4-49, and many others) implies that if the Express line is not built someone else will build a line and that it can't be any better than this one in terms of environmental impacts. This is a totally irrelevant consideration and reflects an excess of jurisdiction.
- Question 6 a? Where and how will this obvious inappropriate, and possibly illegal, position and statement be dealt with?

7. The analysis of local oil exploration and production (page 4-68) is inadequate and contains unsubstantiated assumptions. In Canada the industry routinely discounts the decline in proven and probable reserves, and production, by stressing the compensating factors of technological improvements and price increases leading to increased exploration and production.

e

Question 7 a? If these are factors in Canada, why is there not a full discussion of them in this document?

Question 7 b? If Canadian crude oil will not directly affect oil production in Wyoming and Montana, is it not appropriate to demonstrate this with a discussion of historical drilling activity (1950 to 1995) in the Rocky Mountain states in relation to the 26 refineries that are in play and in relation to the volume of Canadian exports.

8. Endangered species are discussed on pages 4-42 TO 4-46. among others. This document fails to assess the impacts of the pipeline and following human activity on black-footed ferrets. It concedes they may be present in the vicinity of white-tailed prairie dog colonies, and concedes further "surveys" for both species may be required.

f

Question 8 a? Will the required information be obtained, and reported on, before the FEIS, and if not, how will the missing but critical information be considered in arriving at a decision regarding the pipeline?

Question 8 b. How will you determine "significance" of impact (page 4-27) on endangered species if your baseline data, as in the case of ferrets, is not available, as is conceded on pages 4-42 to 4-46?

c. Please see rewritten Appendix N.

f. A Biological Assessment has been submitted to the USFWS in Montana and Wyoming. If the surveys (which will be conducted in the spring prior to construction so as to reflect the most current situation) revealed the presence of any Threatened or Endangered Species, the project would be modified so as not to result in a "jeopardy" situation as outlined in the USFWS Biological Opinion. In the example you mention, avoidance of the prairie dog colony would be required. See page 4-42 for a complete description of the mitigation which would be required to absolutely avoid any potential impact to the black-footed ferret.

4-4

4

9. Mountain Plover habitat will be destroyed (page 4-46) and the population impacted, particularly if it expands or makes seasonal accommodations for ecological reasons. We are expected to assume this is minor, but no data on the status of Plover populations, or this population, are presented. It is a well established principle that fragmentation of habitats can have ecological impacts reaching far beyond the physical limits of disturbance.

Question 9 a? What is the significance of this population in local, regional, and national context?

Question 9 b? To what extent will plovers reoccupy disturbed, as in pipeline disturbed, habitat?

Question 9 c? What will the pipeline right-of-way have on nesting and fledging success of plovers nesting in the vicinity of the line?

The Express Crude Oil Pipeline DEIS is seriously deficient in information, in ecological understanding and rationale, and in impact assessment. The short time frame available since this document came to the attention of Canadian groups (and some American groups) has hampered public participation.

We look forward to the incorporation of information necessary to satisfy our data requests and to an extended period of public comment.

Sincerely,
Speak Up For Wildlife Foundation

Rocky Mountain Ecosystem Coalition

Brian L. Horejsi

Dr. Brian L. Horejsi
President

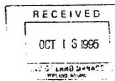
for M. Sawyer

Michael Sawyer
Executive Director

cc. Interested groups
Media

g. The mountain plover is currently a Category One species. However, because the USFWS has indicated that the mountain plover may be listed in the near future, the potential impacts on the species was evaluated in the Express Pipeline Biological Assessment. Implementation of the proposed project is unlikely to cause more than negligible effects to the mountain plover. This conclusion is based primarily on two considerations. First, the likelihood that plovers inhabit all 280 acres of potential nesting habitat crossed by the route is limited. Existing documentation suggests mountain plovers inhabit areas of shortgrass prairie east of the proposed route. Thus, the short-term direct disturbance of this acreage probably would not affect habitats occupied by mountain plovers. Second, construction would not affect individual plovers. Construction is scheduled for July through October. Thus, disturbance would occur after or at the very end of the nesting period when the young have fledged and are mobile. Because of this high mobility, construction is unlikely to cause any mortality to the mountain plovers.

Consequently, effects of the project are expected to be limited to the short-term removal of potential habitat that is probably not inhabited by mountain plovers. Although disturbed temporarily, this potential habitat would again be available for potential use by mountain plovers after it has been reclaimed and revegetated. Cumulative impacts to the mountain plover are expected to be negligible. Under Express' revegetation plan, the route would be revegetated upon completion of the project. Therefore, while some loss of potential habitat would occur over the short-term, no long-term effects would occur.



102



STATE OF WYOMING
OFFICE OF THE GOVERNOR

JIM GERINGER
GOVERNOR

STATE CAPITOL BUILDING
CHEYENNE, WY 82002

October 12, 1995

Bureau of Land Management
Worland District Office
P.O. Box 119
Worland, WY 82401

Attention: Mr. Don Ogaard, Project Manager

Dear Sir:

We are responding to the Draft Environmental Impact Statement prepared pursuant to 40 CFR 1500-1508 on the proposed Express Pipeline Project.

I. Recommendation for No Action

We would like to express our grave concerns about the *Express Crude Oil Pipeline Draft Environmental Impact Statement*. We believe that the document is inadequate and take strong exception to many of its basic assumptions and conclusions. We do not believe that the BLM has adequately examined the long-term socio-economic impacts of the project and we ask that this analysis be conducted prior to any action being taken. We believe that the BLM has failed to justify their choice of Alternative Three.

Wyoming seeks to be at the forefront of protecting state and domestic oil exploration and production. It is critical for the state and the nation that U.S. companies be allowed the opportunity to explore for and develop our own petroleum resources. The increasing national dependence upon foreign oil, whether from Canada or the Middle East, is detrimental to our balance of trade and should be discouraged, not promoted by federal agencies. Any pipeline that

Response to Comment # 102, WY Governor:

a. It is not within BLM's jurisdiction to either discourage or encourage importation of foreign oil. The scope of our decision is solely whether or not to grant a right-of-way on the 97 miles of public lands that would be crossed on the 515-mile route.

would create a regional oversupply of crude oil, at the expense of local producers and state revenues, in particular education revenues, is not economically justifiable. We question the justification for the pipeline, the assertion that regional crude oil supply is inadequate, and the conclusion that refiners cannot obtain the type of supply they require.

The state of Wyoming has three major sources of revenue: sales tax, mineral taxes, and interest income on the permanent mineral trust fund. The last two sources are the direct results of the health and vitality of our minerals industries, in particular, oil and gas. If this pipeline reduces oil prices and mineral revenues, it is not in Wyoming's best interests.

2. Specific Statements of Concern

A. Socio and Economic Impacts

The most important objection of the state of Wyoming is the failure of the BLM to properly and sufficiently comply with the National Environmental Policy Act (NEPA) of 1969 in regards to the conduct of a socio-economic impact analysis. The DEIS speculates upon the economic effects to refiners if the pipeline is not approved, but fails to address impacts to the people of Wyoming if it is approved. The sole exception is the acknowledgment that premiums currently being paid for crude oil are vulnerable. That statement alone should have triggered a major economic analysis, not the cursory analysis presented.

The discussion of effects on refiners is highly speculative and based upon a number of questionable assumptions about markets, other new pipeline projects, reversals or expansions of existing pipelines, as well as other national and international influences outside of anyone's control. The impact on Wyoming of an artificially introduced and massive supply of Canadian crude, however, is not a matter of speculation. The basic laws of supply and demand dictate that crude oil prices will be artificially depressed, and that the higher cost of production on U.S. federal lands will not be able to compete with the subsidized cost of Canadian crude. The introduction of this foreign crude into the markets presently occupied by Wyoming producers will result in decreased exploration and production activity, decreased profitability, and jeopardizes the existence of many, if not all, oil producers in the state. It will also influence the premature abandonment of thousands of marginal wells in the state. All of these reasonably, predictable results will severely harm the minerals tax base, and the mineral and educational revenues. Estimations of state and local revenue loss surpass \$25 million annually, if only the referenced loss of premiums is partially experienced.

b. Please see rewritten Appendix N. An economic impact to Wyoming producers of sweet crude is acknowledged. The projected reduction in prices paid for Wyoming sweet crude oil of \$1.00 per barrel could result in a measurable impact on federal, state and local government revenues in Wyoming. Based on projected 1997 production, State severance taxes could be reduced by about \$1.2 million, State mineral royalties could drop by \$178,000, local ad valorem revenues could be reduced by about \$1.25 million, and Federal mineral royalties could fall by \$1.6 million. The total impact on Wyoming State and local tax revenues is estimated to be about \$3.4 million in 1997. Based on the data you supplied for 1994 oil and gas tax revenues of \$225 million in 1994, this could represent a 1.5 percent decrease. Thank you for the data you supplied.

The "Criteria for Determining Significant Impacts" (Section 4-60) lists the following criteria for assessing adverse impacts: population, housing, public services, agricultural land resources, forest resources, and indicates parameters for measurement of impacts. The report specifically states (4-60) "All socio-economic impacts would be generated by construction of the proposed pipeline. No additional socio-economic impacts related to operation of the pipeline are expected." Oil tax and royalty revenues to the state in FY 1994 exceeded \$220 million, with the majority of that amount dedicated to educational revenues. Erosion of the tax base, oil revenues and subsequent educational revenues are significant, immediate and long-term impacts that should be considered

The DEIS fails to adequately address the potential for the significant negative effects, artificially induced and accelerated by the Express Pipeline, on the state's tax base, on critical state revenue streams, and on the state's educational system revenues. The state of Wyoming perceives that its petroleum industry will be severely impacted, and anticipates the possible acceleration of the decline in oil production which is already impacted by federal land and environmental policies. The socio and economic disruption caused by this project may parallel other "boom and bust" cycle effects, including significant out-migration from the state, unemployment, increased social and welfare costs, and increased incidence of family violence, alcoholism, suicide, etc. All of these negative societal effects are the direct and predictable results of economic depression

B. Purpose and Need

We question several of the basic assumptions in this section.

In the executive summary under the "Purpose and Need" section (page S-1), the BLM states that "the primary purpose of the pipeline is to address the requirements of refiners in the U.S., particularly in the Rocky Mountain region and the Midwest Region, and the producers of Western Canada, simultaneously." Yet, the application is made solely by Canadian companies and no U.S. refiners are listed as applicants. Why not, if refiners are a primary purpose and need? Is the BLM under any obligation to satisfy the profit motivations of foreign companies at the expense of the state of Wyoming and its citizens? We think not.

(1) Supply Issues

Also, in the "Purpose and Need" section (page S-1), the BLM states that crude oil production has been in decline in the region since 1985 and is expected to continue. Further, "because this region has no alternative crude supplies available, Canadian crude oil via the Express Pipeline has the opportunity to satisfy the market." The assertion of an "adequate supply" is false

c. The refiners require no permit from BLM and have therefore submitted no applications. However, please see letters 12, 96, 136, 137, 142, and 145. Express Pipeline Inc. is a Delaware corporation, licensed to do business in Wyoming. The BLM recognizes that it is wholly owned by Canadian interests. As such, it is legally entitled to apply for a right-of-way across public lands.

d. Please see rewritten Appendix N. The Wyoming production projections from present to 2005 are based on the annual rate of decline agreed upon by the Wyoming Consensus Revenue Estimating Group (CREG 1995). As you are aware, the CREG, comprised of State government staff from several departments, meets annually to forecast State of Wyoming revenues from various sources. The CREG projects an annual crude oil production decline of four percent from 1996 to 2005. The reduced rate of decline from the near double-digit decline rates of 1991 to 1994 was based on a dramatic crude oil production experienced thus far in 1995. As of the end of August, 52,788,206 barrels of oil have been produced in Wyoming. If production continues at the same average rate, approximately 219,000 barrels per day, for the last third of 1995, the 1995 total would be approximately 79.2 million barrels, a level above the 78 million barrels in 1994.

Appendix N discloses the potential for further exploration using 3-D seismic and directional drilling technologies and tertiary recovery methods. However, it is unlikely that application of the above-referenced technologies will cause oil production in Wyoming to increase above current levels. Sources interviewed for the economic analysis indicated prices would have to rise above \$20 per barrel for a major exploration increase. However, with stable or slightly higher prices, these technologies offer a real possibility to slow the decline in oil production experienced in recent years. The estimated 1995 production decline of only 1.5 percent is evidence that such a reduction in the rate of decline is possible.

d Wyoming has well documented, proven reserves of crude oil and great potential for future discoveries. This oil is actively being explored for and developed at current price levels, in direct contradiction to the assertion in the DEIS that exploration cannot occur at the current low price. Additional recovery using advanced technologies in secondary and tertiary activities in older fields is expected and is the subject of current state development efforts to support the industry. Additional discoveries in non-conforming and anomalously pressured and temperatured formations are being made by 3-D and 4-D technologies. These formations are the specific target of the Institute for Energy Research (IER) and the Enhanced Oil Recovery Institute (EORI) at the University of Wyoming.

e If the BLM is concerned with supply, we suggest that it offer federal production incentives such as low gravity and marginal well royalty relief as a means of increasing regional oil supply. It is ironic to us that the very federal agencies which drive up the cost of exploration and production, which in turn drives capital investment in petroleum production out of Wyoming and the United States, then cites the decline in production as a reason to assist foreign firms to execute a final *coup de gras* on Wyoming's oil industry. If federal agencies and regulations did not add appreciably to the costs of industry, the production rate and health of the state's petroleum industry, as well as regional crude oil supplies, could be vastly improved and there would be no shortage. I cannot overstate the effect of BLM's policies, so read this paragraph again!

f In a report entitled *The Promise of Oil and Gas in America*, a 1993 task force effort of the Independent Petroleum Association of America, it is noted that the Department of Energy commissioned a recent study (chaired by Dr. W. L. Fisher) to conduct an estimation of the oil resource base that indicated there was up to 204 billion barrels of domestic resource. This recoverable resource is evenly split between discovery of new oil fields and reserve growth within existing fields. Wyoming is listed as a source of future oil discovery and reserve expansion. Specifically, the Powder River Basin (Minnelusa Formation) and Wamsutter Arch (Cretaceous) are identified as new sources. The nature of these resources is non-traditional formations, requiring advanced production technologies. The point, however, is the DEIS assertion (Section 4-68) that "At this present value (\$18-20 per barrel), major exploration for new sources of oil is not economically viable." This is not accurate, as exploration is on-going at current prices and use of advanced technologies offer economic efficiencies, as discussed below. The discovery of massive new fields may be unlikely, but significant reservoirs, albeit in smaller quantities, are being identified in non-traditional formations by non-traditional methods.

A key element in future U.S. development of crude oil supply is the use of new technology to re-examine older fields and discover new fields bypassed using older technology. In terms of price

e. Please see response to letter 10, comment a for a discussion of on-going BLM policies to help improve oil exploration opportunities.

f. Please see rewritten Appendix N. The analysis discusses the technologies available for exploration. The DEIS stated that "major" exploration would not occur at the current prices. Sources interviewed for the economic analysis concurred that an oil price of \$20-25 per barrel would probably be needed for a "major" surge of new exploration.

equivalency, "technology advance is equivalent to a price increase of about \$7.00/barrel." This assertion again challenges the DEIS assertion that current crude prices are not sufficient to stimulate exploration and production. The IPAA further reports:

f "After nearly a decade of low prices, rising imports and increasing regulatory costs that decimated the ranks of independent producers and discouraged investments in U.S. resources, independent producers today are scoring impressive successes using new geological concepts, innovative drilling techniques, and computerized seismic technology. In the process, these entrepreneurs are creating jobs and new economic wealth - and discovering new oil and gas resources."

A classic example of the advances of technology in the re-examination of older fields is witnessed by the stunning production in North Dakota's Lodgepole play. In this case, 3-D seismic techniques have produced a very high rate of drilling success (approaching 90%) with production of 3 to 5,000 barrels per day, all in a previously stagnant field.

g Recent comments by Don Basko of the Wyoming Oil and Gas Conservation Commission reports that Wyoming's oil production in 1995 is only 2% less than 1994. This is a major improvement over the two preceding years wherein we were approaching nearly double-digit declines and brings into question the document's projected decline rate of oil production in Wyoming. This statement brings into question the declining rate of oil production in the state, hence, supply in the region, a basic assumption in justifying the need to import foreign oil.

Additional contradiction to the DEIS assertions about decline, inadequate supply and production capacity is demonstrated within the DEIS itself in Section 2-14 by Energy Analysts. They cite the fact that "figures show that for the first third of 1995, Rocky Mountain production increased over 1994 levels."

(2) Pipeline Capacity Issues

h An article by Robert Bott in *American Pipeline Magazine* (10/95, pp 35-40) reveals that the Interprovincial Pipe Line (IPL) recently expanded its capacity to deliver western Canadian crude to the Midwest market by 110,000 bbls/d and is now proposing an additional 120,000 bbls/d next year. The article states that "IPL estimates that current marketable surplus is only about 80,000 bbls/d and says this was confirmed by a task force including representatives of Amoco, Exxon affiliate Imperial Oil, Pan Canadian, Petro-Canada, Renaissance, Koch and Shell." And, the IPL planned expansion "would soak up all of the anticipated increase in Canadian output." of crude

g. Please see response to letter 16, comment a. The rewritten economic analysis acknowledges the success of the Lodgepole play. As discussed in this response, the production decline has decreased in the first eight months of 1995. The 10-year annual production decline or four percent is based on the CREG projections, which are in agreement with the EAI projections of 4-4 percent.

h. The competing market forces are addressed in the DEIS. The economic analysis incorporates the CREG estimate of an annual decline rate of 4 percent for Wyoming oil production. The economic analysis presented in Appendix N concludes that the Express project would have no effect on sour crude prices (65 percent of Wyoming production), and should cause a fall of \$1.00 per barrel for sweet crude (35 percent of Wyoming production). Most refiners that receive Wyoming crude indicate their opinion that shortages will continue without Express, and therefore favor the Express project.

oil. On September 11, 1995, *The Oil Daily* announced producer support for the 120,000 bbls/d expansion. A quotation from Dave Fesyk, manager of business development for Koch Oil in Canada, further states "We are perplexed by the Express proposal." Koch is a Wichita based producer and refiner, so this statement raises the question of true need by refiners. The same article raises the question of need with reference to new U.S. lines from the Gulf Coast to the Midwest, from the Northwest to the Rockies, the reversal of other Canadian pipelines from west to east, to east to west in order to serve the Midwest, and lifting the export ban on Alaskan crude to Asian markets, thereby, allowing Canadian crude to enter the Northwestern U.S. marketplace. There are already projects in place which will satisfy the DEIS's perceived demand. Clearly the market need is in question. The author states "In spite of these ongoing changes in the market, it still seems that Express may be a solution looking in search of a problem."

The DEIS itself admits on page S-5 that currently proposed projects by Cenex, Amoco and Conoco have the incremental capacity to increase transportation "enough to satisfy Rocky Mountain crude supply declines through the year 2002 with no Express Pipeline project, no change in refinery operations and no change in the refined product pipeline network." Additionally, Express has stated to me that the availability of the Platte Pipeline is crucial to the viability of the Express project. That contingency is not addressed in the DEIS.

There are 11,604 stripper wells in PADD IV, producing 41,000 bbl/d, with a remaining 225 million barrels in reserve base, according to the National Stripper Well Association Study. We risk losing this national energy resource if an artificially induced supply glut and corresponding price decline destroys the economics of these marginal wells. All of these wells are price sensitive and subject to permanent abandonment. The future loss of state and federal revenues and opportunity costs over decades will amount to hundreds of millions of dollars.

The potential collapse of oil and gas infrastructure in the future is a real cost not addressed. The petroleum industry is extremely capital intensive. The loss of current fields (however marginal), distribution and transportation networks, service and supply companies, etc. are an intangible but major economic impact on the region. Even if prices recover at some point in the future, the industry in Wyoming will likely not be able to respond because it will lack the physical infrastructure, business capital and human resources.

(3) Refinery Issues

In terms of the refinery feedstock issue, DOE reports that 1995 PADD IV refining is running at 92-93% of capacity (through July). That is 2% higher than operations in 1994, or 90.6%. Refinery utilization has actually increased in one year. This indicates that there is only a minor supply problem. If prices are better, producers can supply the oil.

Also, in relation to assumptions about refinery feedstocks, the pipeline connection from Regina to Salt Lake City has had a tariff decrease recently. FERC Tariff No. 256 has been reduced from approximately \$3.50 to \$2.69 as of October 1, 1995. This is in response to market conditions and indicates that a supply of sweet crude can be provided to Salt Lake refiners if the price, including tariff costs, is right.

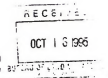
C. Conclusion

In conclusion, we question the risk of economic and social impacts of the proposed pipeline project. We are confident that the existing and foreseeable capacities in crude oil production and transportation, along with the pre-existing Canadian imports and proposed pipeline expansions, will be more than adequate to meet market and refinery needs.

Yours truly,



Jim Geringer



Response to Comment # 103, Snelling.

Please see rewritten Appendix N.

October 12, 1995

Mr. Don Ogaard
Project Manager
Bureau of Land Management
Morland, WY 82401

Dear Mr. Ogaard:

As a resident of Wyoming, I object to the proposed Express pipeline as described in the "Draft Express Crude Oil Pipeline Environmental Impact Statement" and strongly urge the BLM to adopt "Alternative 1-No Action Alternative" as the preferred action.

I find that the DEIS is inadequate in addressing socioeconomic impacts that I feel will result from the installation of the Express pipeline. I am concerned that, since the DEIS already states that there is a sufficient crude oil supply in this area until the year 2003, large quantities (170,000 barrels per day) of additional Canadian crude oil will depress the oil price in this area and result in a loss of state, county and school revenues. I am also concerned about potential job losses that may be associated with a decreased oil price.

I do not agree that the environmental liabilities discussed in the DEIS are justified by any need for the crude oil supplied by this pipeline. The DEIS states that there are numerous ways to get more oil into this area with existing pipelines, without new environmental disturbances.

I strongly urge the BLM to select Alternative 1 as the preferred conclusion.

Sincerely,

R. D. Snelling



133

IPAMS
Independent
Petroleum
Association
of
Mountain
States

530 Denver Club Building • 518 17th Street • Denver, Colorado 80202-4187 • 303/623-0987 • FAX: 303/693-0709

Monday, October 16, 1995

Don Ogaard, Project Manager
BLM Worland District Office
P. O. Box 119
Worland WY 82401

Art Compton, Project Manager
Montana Department of Environmental Quality
P. O. Box 202301
Helena MT 59620

Gentlemen:

**Express Crude Oil Pipeline Project
Environmental Impact Statement**

The Independent Petroleum Association of Mountain States (IPAMS) is the regional trade association in the Rocky Mountains that solely represents the interests of independent oil and gas producers. Our members operate in a 13-state area in the West. Many IPAMS members own oil and gas leasehold interests on lands within the vicinity of the proposed pipeline, including federal lands. The association's members also live in the surrounding communities, pay taxes and employ a significant Montana and Wyoming work force. These members will be directly affected by the Express Pipeline project.

Recommendation

IPAMS recommends Alternative 1 -- No Action Alternative under which Express would not be authorized to construct a 24-inch pipeline on public lands to transport crude between Wild Horse, Alberta, and Casper, Wyoming. The BLM, BOR, and State of Montana would not issue the right-of-way grants or permits for the project.

Statement of Reasons

1. The rate of production decline used in the EIS is flawed. Oil production in the Rocky Mountain region has been declining for the past ten years, but not at the rate indicated by Alberta Energy Company in the EIS. Alberta Energy used a 7.2 percent per

Response to Comment # 133, IPAMS:

Please see rewritten Appendix N, and the response to letter 16, comment a.

year decline rate for its project, and Energy Analyst used a 4.4 percent per year decline rate. IPAMS believes the decline rate is nearer 4 percent per year, which results in an average ten-year decline rate of 3.5 percent (see attached Exhibit 1). It should be noted that oil production for the first six months of 1995 is greater than the production for the same time period in 1994. The difference in the decline rate of 7.2 percent used by Alberta Energy and the IPAMS rate of 4 percent is 100,000 BPD by the year 2004. This means that the Rocky Mountain area will have 100,000 BPD more crude available from domestic wells in ten years than is shown in the EIS (see attached Exhibit 2).

2. Sufficient crude supplies are available. Existing pipelines, combined with the expansion of the Cenex line, the Amoco/Conoco project, and the Wascane-Texasco-Butte line, could add up to 120,000 BPD of Canadian crude to the Rocky Mountain market at a cost significantly less than the cost proposed for the Express Pipeline project. Even with the decline in Rocky Mountain production as projected, sufficient crude will be available for the next ten years through existing pipeline systems and/or systems that can be expanded or built at significantly less cost, to supply the local refineries with feedstock necessary to meet production demands.

3. Lack of the pipeline will not close domestic refineries. Refinery closures, if they should occur, will not be for a lack of feedstock from existing sources but due to the increased costs associated with the Clean Air Act, combined with the small capacity of most refineries that lack economies of scale. In addition, product lines are being built to supply refined products to the major markets of Denver, Colorado Springs and Salt Lake City. Refraction of refined products from export pipelines in the region will put more pressure on many refineries in the Salt Lake City and Denver areas, resulting in lower demand for outside crude via new pipelines such as Express.

4. Socioeconomic impacts must be considered. The National Environmental Policy Act (NEPA) and the Mineral Leasing Act require the BLM to consider the socioeconomic effects of the proposed action when these are interrelated to environmental effects. The EIS does not adequately address the socioeconomic impact of a large capacity crude oil pipeline on the domestic oil and natural gas industry or on the state and local economies. An additional 172,000 BPD of crude oil will definitely have an adverse effect on the price of crude in these areas. When supply exceeds demand, price declines. The tax bases in Wyoming and Montana are extremely dependent on revenue from oil and gas. Any

project that reduces the price of oil at the wellhead will reduce the tax base revenue in the entire state and region.

There is no doubt that the associations' members will be injured as a result of the pipeline and the huge influx of subsidized Canadian oil it will transport. It is a fundamental principle of economics that supply is tied to demand. The pipeline will add an additional 172,000 BPD to the domestic crude market while demand remains relatively constant. This increase will have a significantly negative effect on the market price for oil.

5 Waste of domestic natural resources will result. That significant decrease in the price of crude oil has direct and foreseeable effects on the environment -- in addition to the industry -- in at least two important ways. First, a significant decrease in oil prices will shorten the economic life of domestic oil wells. An operator will produce less of the available recoverable reserves in a well before reaching the economic limits of production. Normally economic wells will be rendered uneconomic by these market conditions. Wells already operating on the economic margin will be abandoned. This premature abandonment leaves otherwise recoverable reserves underground and results in waste of non-renewable natural resources.

Second, lower prices have a similar negative effect on future exploration and drilling activities in the area. These activities are tied directly to the price of oil and gas. During times of low prices, operators are unable to justify the risk of exploratory drilling to discover new fields and reservoirs. Drilling efforts significantly decrease and only developmental, not exploratory prospects, are drilled. The effect of the proposed pipeline will be to leave depletable domestic oil reserves undiscovered.

Both of these impacts result in waste of domestic natural resources. NEPA compels the BLM to consider those economic and environmental effects on the resource prior to rendering its decision. In addition, much of the effected land is public land. Failure to consider these impacts from the pipeline prior to granting the right-of-way also violates the BLM's obligations under the Mineral Leasing Act. Regulations implementing the Act require that any grants of right-of-way under the Act must protect the natural resources associated with public lands and prevent unnecessary or undue environmental damage.

to the lands and resources. As a steward of public lands, the BLM is vested with the responsibility to conserve the nations' natural resources and to prevent waste.

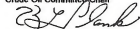
Conclusion.

There are significant and interrelated economic and environmental impacts that will result from the proposed pipeline. These effects on the domestic oil industry and crude oil reserves must be considered. IPAMS urges the BLM to deny the right-of-way grant for the Express Crude Oil Pipeline.

Respectfully submitted.



George H. Fancher, Jr.
Crude Oil Committee Chair



Karyn Plank
Executive Director

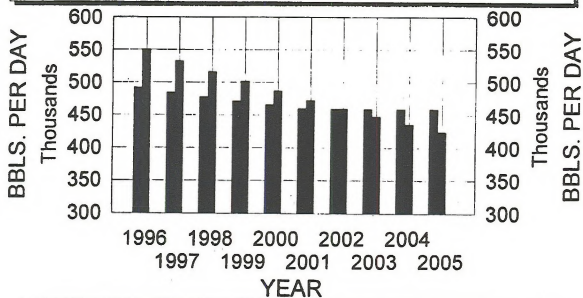
Copies to

The Honorable Jim Geringer, Governor
State of Wyoming
State Capitol
Cheyenne WY 82002-0010

The Honorable Marc Racicot, Governor
State of Montana
204 State Capitol
Helena MT 59620

The Honorable Edward T. Schafer, Governor
State of North Dakota
State Capitol
600 E. Boulevard Avenue
Bismarck ND 58505-0001

ROCKY MOUNTAIN REGION SUPPLY AND DEMAND ANALYSIS EXCLUDING AEC VOLUMES



■ EAI DEMAND ESTIMATES
■ EAI SUPPLY EST. W/EXISTING EXPANSIONS

TABLE I
OIL PRODUCTION, M/BBLs

<u>State</u>	<u>1994 Prod.</u>	<u>1995 Prod. (E)</u>	<u>2004 Prod.</u>	<u>Average 10 yr Rate of Decline</u>
Colorado	21,677	21,500(1)	13,700(1)	3.6
Montana	16,476	15,800(1)	10,000(1)	3.7
Utah	16,815	16,500(1)	12,800(1)	2.5
Wyoming	<u>72,922</u>	<u>79,580(2)</u>	<u>54,000(1)</u>	<u>3.2</u>
Total	127,890	133,380	90,500	3.2

(1) Estimated from decline curve

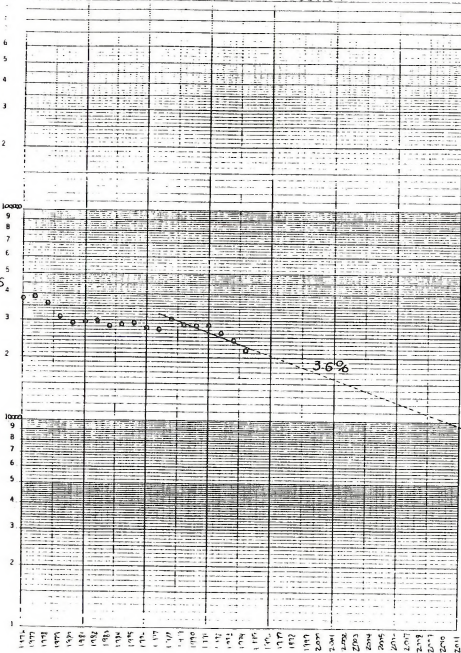
(2) Based on first 6 months prod. of 39,790,457 bbls

FIG. 2. In. 1
COLCHIC YEARLY INCREASING INJECTION

46 5490

BBL'S

1000
9
8
7
6
5
4
3
2
1

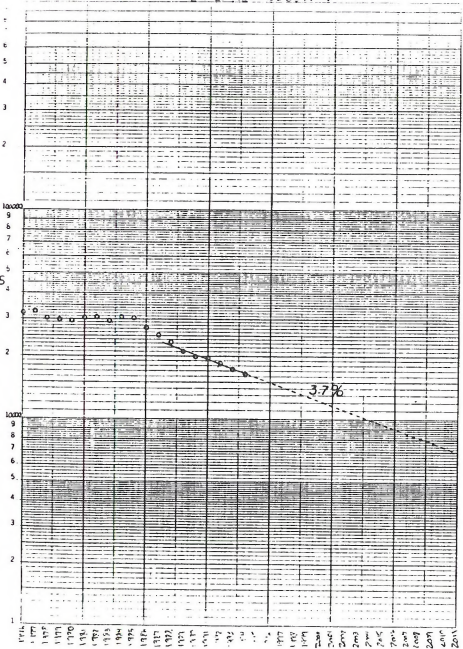


11-12-14 MONTANA YEARLING LITTERS

46 5490

BEELS

1000
9
8
7
6
5
4
3
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1



46 5490



FIGURE 4
WYOMING YEARLY PRODUCTION

46 5490

WE
New Quarterly
April 1940 to 1941

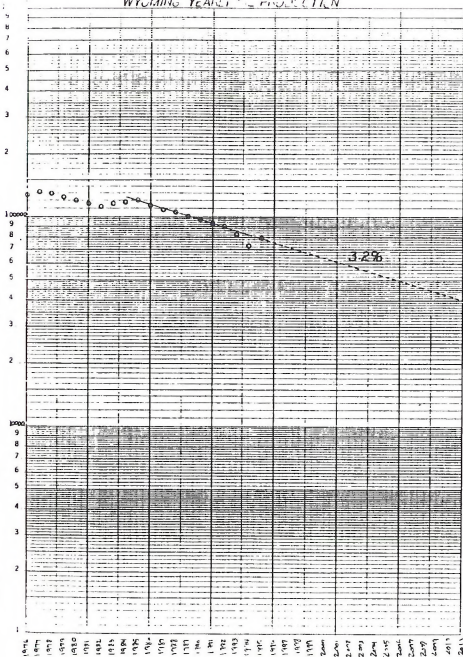
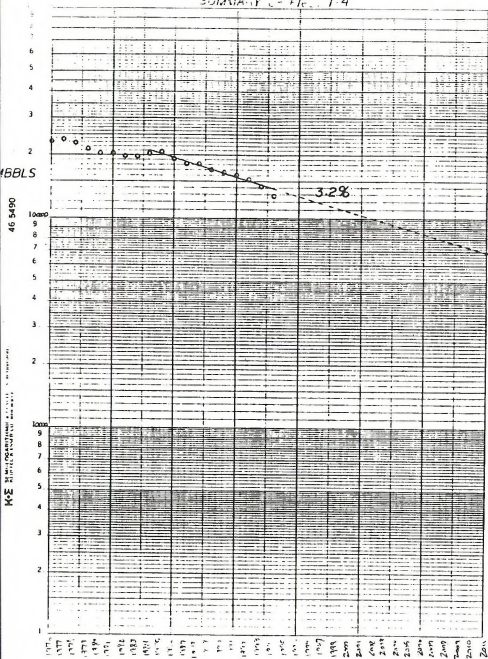
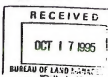


FIGURE NO. 5
SUMMARY OF FIG. 1-4





October 12, 1995

Worland District BLM
P. O. Box 119
Worland, WY 82401

Attn: Don Ogaard

Re: Canadian Express Pipeline Public Comments

Dear Mr. Ogaard:

With regards to comments concerning the Canadian Express Pipeline, please be advised of the following. Merit Energy Company began oil and gas operations in the State of Wyoming May 1, 1995. We currently operate a total of 220 wells, all of which are located on federal land. Production averages 2800 BOPD at a price of \$13.03. We have 13 employees and our Wyoming tax rate is 12%, inclusive of severance and ad valorem. Gross revenues are estimated at \$1,029,000 a month with Merit netting \$500,000/per month. Approximately 100 BOPD production is shut-in due to unfavorable pricing. A production loss of 300 BOPD is attributed to projects currently placed on hold awaiting price stabilization. Our current cash flow is \$5.85/bbl. It is our opinion that the pipeline will reduce cash flow by 25% making it \$4.35/bbl.

If you would like additional information or have further questions, please contact me at (214) 701-8377.

Sincerely,


Sheryl J. Carruth
Regulatory Manager

SJC:s

Response to Comment # 135, Merit.

Please see rewritten Appendix N. Thank you for the data you supplied.

WYOMING OIL PRODUCERS: THE CANADIAN EXPRESS PIPELINE PUBLIC COMMENT PERIOD CEASES OCTOBER 17, 1995. WIPA BOARD MEMBERS ATTENDED THE CASPER & WORLAND BLM HEARINGS HOWEVER, PRODUCER ATTENDANCE WAS POOR. PLEASE SEND YOUR COMMENTS TO: DON OGAARD, WORLAND DISTRICT BLM, PO BOX 119, WORLAND, WYOMING 82401.

RECOMMENDED POINTS TO INCLUDE IN YOUR LETTER:

- 1/ Your production, employees and taxes paid in Wyoming.
- 2/ Your federal production and gross revenues.
- 3/ Current price you are receiving for crude oil.
- 4/ Your shut-in production due to current prices.
- 5/ Your potential projects for increased production and reserves now waiting for some type of price stability.
- 6/ Your "bottom line" from crude price less taxes, royalty and operating expense. (Assume pipeline will reduce present price, \$1.50 per barrel.)
- 7/ Canadian Express Pipeline capacity of 170,000 BOPD to be operational in 1997.
- 8/ Favorable Canadian drilling & production incentives to producers that are based on a sliding scale of price received versus wellhead royalty paid.
- 9/ Favorable Canadian pipeline tariffs.
- 10/ Canadian dollar discounted to U.S. dollar (\$0.73 vs \$1.00 today)
- 11/ Canadian government shut down oil exports to U.S. northern tier refineries in early 1970's.
- 12/ Continuing U.S. balance of payments problem with dramatically rising crude imports.
- 13/ Loss of Wyoming tax revenues...diminishing Wyoming tax base for lifestyle and schools.

PLEASE WRITE! THIS IS A SERIOUS DISPLACEMENT OF OUR PRODUCTION!

Wyo independent oil producers group criticizes Canada-to-Casper pipeline study

CHEYENNE (AP) — The initial version of a study on a crude oil pipeline proposed to run from Canada to Casper failed to consider the potential economic effects on Wyoming oil producers, an industry group said.

The Wyoming Independent Producers Association, in comments delivered on the Bureau of Land Management's draft environmental impact statement on the project proposed by Express Pipeline Inc. called the document inadequate.

"The Express Pipeline may result in economic chaos, social tragedy and extreme reduction of Wyoming's existing tax base," the group said in a release. "The risk of these possibilities is not thoroughly addressed by the existing draft statement."

BLM project manager Don Ogaard said the group's concerns

would be included in the final environmental impact statement, which is due to be released in December.

"The WIPA has a lot of expertise in crude marketing and pipeline," he said in a telephone interview from his Worland office. "They commented that though there is a world market in crude, by bringing in large volumes of Canadian crude into one market, you could depress the market in one place. We want to examine that and take it into account in the final."

He said during the study process on the draft statement, officials also considered what could happen if the pipeline were not built.

"The effects (of that) could be refinery closures, thus closing off markets to Wyoming producers," he said. "The (finished) product

pipelines might start coming in, again resulting in refinery closures or loss of market" to in-state producers.

The 616-mile pipeline would wind along only 96 miles of federal lands on its route from Hardisty, Alberta, to Casper, Ogaard said. Initially, it would transport 170,000 barrels of crude oil per day to Casper.

He said Express has said it would like to begin building the pipeline by early next spring, and begin shipping oil by next fall.

Ogaard also said the only decision the BLM can make would be on whether to grant rights-of-way for Express to use those 96 miles along the route of the pipeline.

The public comment period on the draft statement continues through Oct. 17 and will include several meetings.



CRYSEN REFINING, INC.
A CRYSEN CORPORATION COMPANY
October 16, 1995

Mr Don Ogaard
Bureau of Land Management
P.O. Box 119
World, Wyoming 82401

Dear Mr. Ogaard,

We are writing this letter to express our support for the Express Pipeline project, and to provide for you the perspective of the refining community here in Salt Lake City. We believe the assertions submitted by those in opposition to this project are not based on informed facts. As Refiners in Salt Lake City, we are in desperate need of a project like this, any delays could be a disaster for the refining community, and the independent producers in the Rocky Mountains.

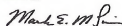
The refineries in the Salt Lake Area are built to refine high gravity, low sulfur crude oil. Most of this oil is gathered in the Southwest Wyoming area. These supplies are supplemented with similar amounts of crude oil available from other parts of Wyoming and the Rocky Mountains. For the past several years these types of crude oils have been in a steady decline. There have been no new significant discoveries of light sweet crude in the area for several years. Refiners are attempting to stay alive in a competitive business with dwindling supplies.

In the mean time competition from the west and other regions have targeted this area for competitive expansion because they have a complete knowledge of the supply situation. They realize that the population is growing and that those of us who supply petroleum products in this area cannot buy crude supplies at a competitive price or in the quantities that are needed. They are proposing product pipelines into this region. If these pipelines are constructed the refineries in this area will close. That would leave producers in this Rockies without an outlet for their crude oil. The result would make producers in this area shippers at their expense. The economic impact on the Rocky Mountain area would be dramatic.

Some of the producers have mistaken the production of asphaltic crude oils in Wyoming as an alternative for Salt Lake refiners. Our hardware in this valley was never constructed to process heavy crude oils with high sulfur content. Their assertions that pipelines have enough local crude oil to provide supply are mistaken for this reason. The only alternative for refiners to operate is light sweet crude oil. The only viable location for that type of crude oil is Canada. The only reasonable transportation rate being offered to refiners is the Express Pipeline.

We believe that if the Express Pipeline is not completed as a project many of the Salt Lake Refineries will shutdown. This will raise product prices in the area to consumers. It will have a negative effect on the prices local producers will receive. It will drastically reduce revenue to the communities, and the states in the way of taxes, royalties, and commerce. We would encourage decisions that are made based on realities. We support Express Pipeline.

Sincerely,



Mark E. McSwain
Director of Crude Supply
Crysen Refining Inc.

Response to Comment # 136, Crysen:

Please see rewritten Appendix N. Thank you for the data you supplied.

RECEIVED

OCT 17 1995

October 17, 1995



Chevron

Chevron U.S.A. Products Co.
P. O. Box 25117
Salt Lake City, UT 84125

Larry R. Shanks
Refinery Manager
Phone (801) 538-7212
Fax (801) 538-7130

Mr. Don Ogaard
Bureau of Land Management
P. O. Box 119
Worland, Wyoming 82401

Dear Mr. Ogaard:

Chevron would like to express its support for the Express Pipeline project to transport crude oil from Hardisty, Alberta to Casper, Wyoming. We would encourage you to approve the public lands right-of-way grant required for construction and completion of this project.

Chevron operates a refinery in Salt Lake City and produces crude oil and natural gas throughout the PADD IV area. Through our subsidiary, Chevron Pipeline Company, we transport both crude oil and products to serve the Salt Lake City refineries. With this significant presence, Chevron is committed to providing the public with affordable product to supply their needs.

With the projected growth of the area, the refineries in the PADD IV region will require the availability of crude oil in increasing quantities and qualities to meet the product demand. Chevron also agrees with the U.S. Department of Energy's published data which shows the region's local supply of crude declining. This decline coupled with product demand growth is forcing the refining community to look outside the region for needed crude supply.

It is our view, that the Express project will provide an option to supply the crude in sufficient quantities and qualities to supply the area's needs. We, therefore, support the effort of Express and request that the application for right-of-way be approved.

Should you have any questions, please contact Mr. D. R. Lee at (801) 539-7519.

Sincerely,

Response to Comment # 137, Chevron:

Please see rewritten Appendix N. Thank you for the data you supplied.

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OCT 17 1995

138

Worland, Wyoming
October 16, 1995

Don O'gaard
Bureau of Land Management
P.O. Box 119
Worland, Wyoming

This letter is being submitted for the purpose of comment on the proposed pipeline to be put through our farm in Washakie County, Wyoming.

Although the nice big fat book states that there is no prime farmland in Wyoming, we beg to differ with that opinion. Our land is very good farmland, some of the best in the county. The farm is our livelihood and disruption of any part of it will pose a threat to our operation. Farming is not such an easy life-style that we can afford to take it lightly when someone proposes to put a pipeline through it.

Also the ramifications of such a trench being put straight across the fields will not be just for the year or two mentioned as needed for the construction of the line but for a long time after. All the careful separation of top soils, etc., will not eliminate the many future problems we will face when returning the land to its former level of production.

We have farmed the land in Section 15 for 41 years, just a few years after it was first brought under cultivation in the late 1940's and the land in Section 22 for almost as long. So we have a first-hand knowledge of the problems involved with filled in trenches and gulleys. There is washing of topsoil, the difficulty in getting water to flow over trenches instead of disappearing into them which affects the process of getting your water over the whole field. There is the likelihood of holes opening up, sometimes overnight, which is a danger to equipment. These are serious in the business of farming. These problems occurred for 20 years after the initial breaking of the ground for farming.

We already have two pipelines crossing our farming operation and while the companies have been fairly good about it, we have found that they leave no room for the later problems that have come up. We still have problems with the trench opened in 1992 to lower a pipeline. It was so near the surface that we snagged with our equipment. One can still see the trench line by the condition of the crops. Another line was also snagged with the result in some of the soil being contaminated. This still grows nothing. These lines were supposedly deep enough that they would not cause any future problems. It is now too late to do much about it. That is why we are making these comments now.

We feel we have a right to expect respect for our position and if this line goes through, adequate compensation for such losses occurring from the presence on our land and for inconveniences suffered. We expect recognition by those involved and negotiations in good faith. We would like it better yet if there was no line through our land at all.

Dellos Farms, Operators
Herman Dellos, Landowner
October 2, 1995

Response to Comment # 138, Dellos Farms.

a. The term "prime farmland" derives from Natural Resources Conservation Service (formerly the Soil Conservation Service) description of agricultural land, where it is defined as follows:

Prime farmland, as defined by the U.S. Department of Agriculture, is the land that is best suited to food, seed, forage, fiber, and oilseed crops. Many other factors such as soil type, adequate supply or moisture from precipitation or irrigation, erodibility, etc. are used in the classification. Although none of the lands crossed in Wyoming fits this technical definition, the BLM did not mean to minimize the importance of your land to your business or your family.

b. The BLM shares your concern about rehabilitation on your farmland. General protection measures for grading, trenching and backfilling are described on pages B-34 and B-35 of Appendix B. Specific construction and land reclamation measures on private lands will be determined between the land owner and the project sponsors. BLM soil scientists are available to provide assistance at the request of the land owner.

c. Please see response to letter 95, comment c.

RECEIVED

OCT 17 1995

JULANDER ENERGY COMPANY

Energy, Natural Resources, the Environment.

139

VIA TELEFAX (307) 347-6195

October 17, 1995

Mr. Don Ogaard
Project Manager
BLM Worland District Office
P.O. Box 119
Worland, WY 82401

Re: Express Pipeline

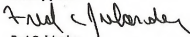
Dear Mr. Ogaard:

Julander Energy Company is an independent natural gas and crude oil producer with a significant acreage position in southwestern Wyoming and northwestern Colorado. We pride ourselves on striving to be a low-cost producer in order to prosper in a competitive, free market environment.

In reviewing the proposed Express Pipeline, we have determined that the rush to predict a continued decline of Wyoming crude oil is too hasty. Based on our recent experiences and those of other producers in the region, we believe that new technologies, such as horizontal drilling, 3D seismic, and new logging techniques, will enable Wyoming and Montana producers to reverse the trend of declining crude oil reserves and production within the next five years. If the Express Pipeline is built, we believe the states of Wyoming and Montana will be on the losing end of this project because the resulting low prices will inhibit producers from experimenting with, and implementing, these new technologies.

As you are well aware, the decline in crude oil production has a negative impact on the state and local tax revenues of Wyoming and Montana. As an independent producer, we urge you to oppose the approval of the Express Pipeline based upon predictions of continually declining oil production. The region is poised for significant production activity. The Express Pipeline would jeopardize that opportunity. I would be pleased to discuss my thoughts in greater detail with you or your staff. I can be reached at (303) 860-7510. Thank you for your time and consideration of my request.

Sincerely yours,



Fred C. Julander
President

Pride in the Rockies

Response to Comment # 139, Julander:

Please see rewritten Appendix N. Thank you for the data you supplied.

Montana Express Inc. (402) 433-1101
 4000A-421 7th Avenue S.W. Calgary, Alberta, Canada T2P 4K8
 Tel: (403) 691-0822

Express Pipeline Inc.



October 17, 1995

Mr. Art Compton
 Project Manager
 Montana Department of Environmental Quality
 P.O. Box 202301
 Helena, Montana 59620-2301

Mr. Don Ogaard
 Project Manager
 BLM Worland District Office
 P.O. Box 119
 Worland, Wyoming 82401

Dear Messrs. Compton and Ogaard:

Re: Comments on Express Pipeline Draft Environmental Impact Statement

Express Pipeline Inc. (Express), an affiliate of Alberta Energy Company Ltd. and TransCanada PipeLines Limited, hereby submits its comments on the Draft Environmental Impact Statement (DEIS) issued on August 18, 1995. Express believes that access to new crude oil supplies is the most critical issue facing refiners in the Rocky Mountain (PADD IV) and Wood River/Patoka (southern PADD II) regions. Long-term declines in U.S. production requires a large growth in crude imports. Without these imports, refiners face high feed stock costs, increased pressure on product margins, and the risk of having to shut down in the face of increased competition from product imports. Access to crudes better suited to existing refinery requirements will allow these refiners to expand to meet growing demand while minimizing requirements for environmental upgrades. Express believes that its proposed project comprehensively addresses PADD IV refiners' urgent need for crude oil supply diversification.

Express understands that two decisions will be made based on the information and analysis contained in the DEIS, one by the Federal Bureau of Land Management (BLM) on whether to issue a right-of-way grant across Federal lands in Montana and Wyoming, and the other by the State of Montana Board of Environmental Review (BER), pursuant to its authority under the Montana Major Facilities Siting Act, on whether to issue a certificate of environmental compatibility and public need allowing for pipeline construction in Montana. The DEIS identifies three possible alternatives that may be adopted to support the BLM and BER in its decision making process:

- No Action Alternative (Alternative 1) whereby the project would not be authorized;
- Proposed Action Alternative (Alternative 2) which is the project as originally proposed by Express ; and
- Proposed Action Alternative with Modifications (Alternative 3) which includes proposed modifications developed by the BLM and Montana Department of Environmental Quality (MDEQ) during project scoping.

The DEIS analyzes the potential impacts of the proposed project and Express generally agrees with the analysis contained therein. Express believes, however, that the proposed modifications described in Alternative 3 are not required in order to minimize the potential impacts of the project. Accordingly, Express supports adoption of Alternative 2, although Express would not object to adoption of the wildlife timing modifications identified in Alternative 3 (provided, however, that certain clarifications to this proposed modification, discussed below in Section I, are adopted).

Express also believes that certain information in the DEIS concerning the economic impact of alternative projects -- included for the purpose of assisting the BER in evaluating the proposed project under the Montana Major Facilities Siting Act -- is incomplete because it does not identify the deficiencies associated with those projects nor does it identify the benefits that will be realized by the Express project as compared to these alternatives. Because this analysis is included as part of the "No Action Alternative" whereby Express would not be built, Express believes it is particularly important to identify the limitations of alternative projects as well as the additional benefits provided by Express that will not be provided by the identified alternatives. Therefore, Express is providing herein additional analysis and information that it believes will assist the BER in finding that the Express project will minimize environmental impacts, given the state of available technology and the nature and economics of the alternatives.

Express' comments on the DEIS are comprised of three sections. Section I includes general comments on the DEIS, including comments which Express believes support adoption of Alternative 2 and rejection of the modifications (except for the wildlife timing restrictions) identified in Alternative 3. Section II includes comments on specific points in the DEIS, complete with page references and suggested clarifications. In those cases where a substantive change is suggested, Express has provided an explanation of why it believes the change is required. In some cases, however, Express is suggesting simple word changes which it believes help make the DEIS more accurate, and no explanation of the change is provided. Section III includes Express' response to the "Economic

Analysis of System Alternatives to Express" contained in Chapter 2 (pp. 2-12 through 2-22).

SECTION I - GENERAL COMMENTS

Express supports adoption of Alternative 2, but would not object to adoption of the wildlife timing restrictions discussed in Alternative 3, provided, however, that certain clarifications to this proposed modification (discussed below) are adopted. Express understands that the BLM supports this position on the basis of the statement in the August 8, 1995, cover letter in the DEIS indicating that "the BLM's preferred alternative in this DEIS is Alternative 3, Proposed Action as Modified by the Wildlife Timing Limitations Alternative." Express notes, however, that the abstract in the DEIS contains the statement that "the BLM's preferred alternative is the Modified Action Alternative." (Abstract, paragraph 2, line 4). Express assumes that the reference to the "Modified Action Alternative" is intended to encompass only the "Proposed Action as Modified by the Wildlife Timing Limitations Alternative" as referenced in the August 8, 1995 cover letter, rather than the entire list of proposed modifications discussed on pages 2-50 through 2-55 of the DEIS. Accordingly, Express requests that the wording in the abstract be clarified in the Final EIS to confirm that the BLM supports adoption of the "Proposed Action as Modified by the Wildlife Timing Limitations Alternative" but does not support adoption of the other modifications discussed in the DEIS.

The DEIS indicates at pages 5-11 and 2-50 that because the variations to Alternative 2 were too small individually to be considered separate alternatives, they were combined into one alternative. Accordingly, Express understands that the BLM and BER have the discretion to reject the proposed variations in Alternative 3 in total, or to adopt any combination of one or more of the proposed variations. Based on this understanding of the BLM's and BER's discretion, set forth below is Express' explanation of why it opposes certain variations in Alternative 3 and why Express believes such modifications are not required to minimize the potential impacts of the project.

- Boring the Yellowstone River Alternative - Express is strongly opposed to this alternative for the reasons set forth on pages 4-15, 4-16, Appendix I (Yellowstone River Crossing Feasibility Study) and Appendix K (Draft 404(b)(1) Evaluations for the Yellowstone River and Missouri River Proposed Pipeline Crossings, pp. K-4 through K-6) of the DEIS. Moreover, Express understands that a number of conventional (*i.e.*, non-drilled) pipeline crossings of the Yellowstone have been successfully completed in the past few years with no significant impacts reported. Accordingly, Express does not believe that there is a sound justification for adopting this alternative.

Response to Comment # 140. Express:

a. We agree that the BLM, BER and DEQ have the discretion to adopt one or more of the proposed variations of Alternative 3. The BLM will not require boring the Yellowstone River, pipeline casing, and the Bridger Trail re-route. The BLM will support the DEQ on the stream crossings timing restriction.

While the BLM may not require boring, the Corps of Engineers may consider a directionally drilled crossing under their regulations. The legal description given on page K-4 is incorrect and should be changed to T3S R23E NW1/4 section 6. The directionally drilled alternative is in the E1/2 section 6. The proposed depth of burial is 18 feet rather than 10 feet. While changes to bottom contours are minor there will be significant changes in contours to the south streambank if the crossing is open trenched as proposed (see Appendix O for further discussion).

Appendix I and the discussion on pages 4-15 and 4-16 indicated there were technical problems associated with a directionally drilled crossing, most notably large cobbles which could deflect the drilling unit and problems which may be surface if fractured bedrock is encountered. Recent drilling of the Missouri River near Great Falls by the Cenex project encountered some problems with the crossing, the reamer was stuck for a period, but the crossing was successfully completed. More recent information conveyed to DEQ by Express and its consultants indicates that based on preliminary information at the downstream location a directionally drilled crossing is technically feasible. In addition more recent information conveyed to DEQ by Express indicates that the cost difference between open trench construction and a directionally drilled crossing is \$1.04 million rather than \$4.6 million indicated on page 4-15. Scheduling problems may be overcome by starting drilling operations before the main start of construction in July. It is our understanding that Express will directionally drill the crossing of the Missouri River before the main start of construction.

- Bridger Trail Alternative - As noted in the discussion on page 2-51, the pipeline would cross the Bridger Trail on privately-owned land in Fremont County, Wyoming, and it is Express' understanding that neither the BLM nor BER have authority to order routing changes or mitigation measures on non-Federal lands in Wyoming. Moreover, Express understands that the owner of the subject lands prefers the route as proposed by Express. Express also prefers the proposed route because it is approximately 0.9 miles shorter and would disturb 9.5 fewer acres (based on a 90 foot wide construction right-of-way) than would the alternative. For these reasons, Express is strongly opposed to this alternative.

- b
- South-Central Montana Alternative - It was Express' understanding that this alternative was part of the proposed action in Alternative 2. The proposed realignment was developed initially to respond to a specific alternative routing request made by a respondent from Stillwater County, Montana, during the public scoping for the proposed Altamont Gas Transmission Company (Altamont) project. The reason for the realignment was that the terrain was too steep north of the Cove Ditch irrigation canal in Section 25 of Township 2 South, Range 22 East for conventional boring techniques to be used. The deviation from earlier routing proposed for the Altamont project is shown at Figure 7A of the DEIS, as is Express' proposed route which parallels this realignment immediately to the west. In addition, Express supports this alternative for the reasons discussed on page 4-51 of the DEIS. Accordingly, Express requests that this alternative be incorporated as part of the proposed action in Alternative 2.

- c
- Wildlife Timing Limitations Alternative - Express is not opposed to this alternative and the restrictions discussed on pages 2-51 and 2-54 of the DEIS, provided that the clarifications discussed below and Express' comments in Section II concerning raptor nests are accepted. First, Express requests that, with respect to the preference of the Wyoming Game and Fish Department of not constructing in crucial big game winter ranges between November 15 and April 30, a distinction be made between mainline construction and certain non-mainline, construction-related activities performed by small work crews (such as transportation and stockpiling of linepipe, clean up/reclamation, hydrostatic testing and operational maintenance/repairs). Express requests that it not be prohibited from performing non-mainline activities, if necessary, during the November 15 to April 30 time period.

- d
- Second, Express requests that, with respect to not constructing across certain rivers in Montana after October 1 if brown trout spawning

b. Because no significant impacts were identified for the realignment, we have no objection to including this re-route in the proposed action. The South-Central Montana Alternative, described on page 2-51, has been dropped as an alternative. The re-route has been added to the Proposed Action on pages 2-48 through 2-50 as another route realignment.

c. We have no objections to construction-related activities performed by small work crews. The wildlife timing restriction in the crucial big game winter ranges applies to the period from the commencement of right-of-way clearing to backfilling of the trench.

d. DEQ has no objection to work which would not contribute sediment to streams after October 1 and supports this general concept. Stream specific timing restrictions are given in Appendix O. If construction extends beyond October 1, one condition of approval would be that Express notifies the state inspector three days in advance of any work which would contribute sediment to a stream. If DEQ review and consultation with MDFWP indicates that such work would not interfere with fish spawning or incubation of fish eggs it would be allowed. Such a condition has been used successfully on past projects.

d habitat is found at or downstream of the crossing, a distinction be made between installation of the pipeline and installation, use and/or removal of temporary culverts or portable bridges as well as clean up and reclamation of the river banks. Express requests that it not be prohibited from conducting these latter activities, if necessary, after October 1.

Express believes that the two modifications which it is requesting will allow for more efficient construction practices while still being responsive to the concerns raised regarding crucial big game winter ranges and brown trout spawning, respectively.

e • Stream Crossings Timing Alternative - Although neither the BLM nor MDEQ has supported this modification in the DEIS, Express is not opposed to the timing restrictions discussed on page 2-54, provided that one modification is made. In the event this modification is adopted, Express requests that it be permitted, if necessary, to conduct clean up/reclamation of the stream banks and use/remove temporary culverts or use portable bridges outside of the August 1 to November 15 window for stream crossing construction. Express believes that such a modification would allow for more efficient stream crossing construction practices while still being responsive to the State of Montana's concerns of installing the pipeline across streams during low flow.

f • Pipeline Casing Alternative - Express is strongly opposed to the modifications discussed on pages 2-54 and 2-55 of the DEIS. Express agrees with the statement on page 4-81 that "this alternative may actually increase the probability of an oil spill at or near a river or stream." Notwithstanding additional material and installation costs, casings represent long-term risks and operational concerns. Express points to recent research on the casing of railways and highways (which are generally much shorter crossings than rivers), which resulted in the development of a design aid to support the use of non-cased crossings, wherein it stated that: "... difficulties with corrosion would be obviated by removal of the carrier from the casing, since the presence of a casing may expose the carrier to atmospheric corrosion, along with reduced effectiveness of any cathodic protection system." See, "Technical Summary and Database for Guidelines for Pipelines Crossing Railways and Highways", Gas Research Institute, Report No. GRI-91/0285, Executive Summary, December, 1991.

Additional problems associated with cased stream crossings include:

e. See response to Comment 140 d.

f. Thank you for the information. Both the BLM and DEQ agree that no pipeline casing across rivers will be required.

(1) With long casing installations at river crossings the general risk of corrosion of the carrier pipe due to undetected (or at a minimum difficult to repair) atmospheric corrosion, or due to an electrically shorted casing, is higher than it is for shorter cased installations at highways or railways which themselves are to be avoided;

(2) Stream crossings generally entail bending the pipe to conform to channel and bank configuration, and to allow for deeper depth of burial below the channel bottom. To achieve this with a cased crossing would be difficult, if not impossible, depending on the degree of bending, considering that the carrier pipe must be threaded into the casing;

(3) It may be difficult, and it certainly would be more costly, to weight coat the cased pipe (more weight required due to additional buoyancy due to an effectively larger outside diameter);

(4) There may be undetected coating damage due to threading the carrier pipe into the casing; and

(5) The ability to install a cased crossing at the Missouri River, or any other crossing via the horizontal directional drilling method is questionable.

For these reasons, Express is opposed to this alternative and supports the statement on page 4-80 that "[o]perating history and subsequent industry experience has shown that properly installed river crossings by either open-cut or boring techniques has minimized the potential of spills."

Express also provides the following general comments on other matters in the DEIS.

The alternative of trenching the Missouri River is referenced in the executive summary (page S-12) and included in Chapter 2 (page 2-9) in the section entitled "Alternatives Considered But Not Given Detailed Study." The DEIS indicates that the trenching of the Missouri River "was dropped from further consideration." Although Express is prepared to accept directional drilling of the Missouri River as the preferred alternative, Express understands that the trenching alternative was given detailed consideration. Accordingly, Express requests that the Final EIS be modified to clarify that in the event directional drilling of the Missouri River is unsuccessful, trenching will be permitted as contingency. Specific wording changes to the DEIS are suggested in Section II.

g. Open cut trenching of the Missouri River would require an individual 404 permit from the Corps of Engineers. BLM would cooperate in the NEPA process required for this decision. The alternative of trenching the Missouri River was not given detailed analysis in the DEIS, rather, it was an alternative that was dropped from further consideration because of anticipated construction impacts in a Wild and Scenic River with habitat for the pallid sturgeon, a fish listed under the Endangered Species Act. Therefore, a supplemental NEPA analysis associated with the Corps individual 404 permit process would be required.

DEQ recommends that the crossing of the Missouri River be directionally drilled. If three separate attempts to directionally drill this crossing fail, then DEQ recommends that Express be allowed to pursue using the open trench method. If open trenching is necessary, DEQ requests authority to work further with local, state and federal agencies to place conditions on the timing of construction, to require methods to further reduce sediment production, and approve reclamation of the pipeline right-of-way at the Missouri River crossing. A separate 404 permit would be required for open trenching and would require a separate environmental assessment. This process may take three months or more.

h • Express notes that portions of the DEIS (e.g., page 1-8, Decisions to be Made; page 4-1, paragraph 1, lines 4-5) reference routing alternatives or mitigation measures involving non-Federal lands in Wyoming. Although Express will comply with all regulatory requirements applicable to all lands crossed by the pipeline, it is Express' understanding that neither the BLM nor BER have authority to require specific routing changes or mitigation measures on non-Federal lands in Wyoming. Express requests that the Final EIS clarify that the scope of authority of the BLM and BER does not include the authority to require routing alternatives and mitigation measures on non-Federal lands in Wyoming.

i • The DEIS indicates in numerous references that construction of river crossings will take from several days to several weeks but does not indicate that the actual period of in-stream work would be minimal, ranging from 1 day for most stream and river crossings to 2-5 days for major crossings such as the Yellowstone River or Big Horn River. Express suggests that the DEIS be clarified to indicate that actual in-stream work will take only a limited amount of the total time required to complete construction of river crossings, thereby limiting the potential for additional environmental impacts.

• Below in Section II Express is suggesting certain clarifications and word changes to the text of the DEIS. Express has referenced page numbers as well as paragraph and line numbers where appropriate. For purposes of following the references, Express notes that it has counted portions of paragraphs that carry over from one page to another as full paragraphs (e.g., lines 1 through 6 on page S-3 would be referenced as paragraph 1 even though the paragraph begins on the bottom of page S-2). Express requests that wherever its suggestions are adopted, corresponding changes be made to the Executive Summary, Abstract, August 8, 1995, cover letter and any other sections of the DEIS, as appropriate.

SECTION II - SPECIFIC COMMENTS AND PROPOSED REVISIONS

Page reference	Comment
S-10 (para. 3)	Express believes that the last sentence of this paragraph discussing pipeline "Maintenance" activities would be more accurate and more consistent with standard pipeline practices by changing the sentence to read as follows: "In addition, all mainline block valves and actuators would be inspected and maintained in accordance with established best pipeline practices."

h. The DEQ and BER have no authority in Wyoming. The BLM will not generally specify routing or mitigation on private lands. The only exceptions would be under the authority of federal law applying generally to "federal actions" such as the cultural resources protection laws and the Endangered Species Act. Any actions undertaken on private lands would be in consultation with the private landowner.

i. Comment noted and included in Appendix O.

j. The proposed wording does change maintenance requirements from the specific "all valves and valve actuators would be inspected semi-annually, operated and lubricated" to the general "mainline block valves and actuators would be inspected and maintained in accordance with established best pipeline practices". For these reasons, the agencies prefer the wording as is.

Page reference

Comment

1-11 to 1-14
(Table 1)

Table-1 is intended to identify the permit, approval and consultation requirements for the Express project. Express has identified some inaccuracies in the table as well as references to approvals which are not applicable to the Express project. They are as follows:

(1) On page 1-11, under the U.S. Bureau of Land Management, Temporary use permit - Express is uncertain as to whether it requires this permit. If so, the text in this part of the table appears to reference a different project.

(2) On page 1-11, under the U.S. Bureau of Land Management, Amend the U.S. Department of the Interior right-of-way grant - The text in this part of the table referring to an amendment appears to reference a different project.

(3) On page 1-11, under the U.S. Bureau of Reclamation, Perpetual license for canal and electric transmission line crossing - It is Express' understanding that the BLM will issue the right-of-way grant on BOR lands.

k (4) On page 1-12, under U.S. Bureau of Reclamation, Easement for Irrigation District Crossing, a reference is made to the Hermisson Irrigation Ditch in Idaho. This reference is inaccurate as the Express project does not cross the State of Idaho.

(5) At the top of page 1-12, Express believes that several lines of text may be missing. The Western Area Power Administration would likely issue an encroachment permit for crossing electrical transmission lines; the U.S. Department of Transportation would issue a permit for crossing Federally funded highways; and the U.S. Department of Treasury, Bureau of Alcohol, Tobacco and Firearms would issue permits for handling explosives.

(6) On pages 1-12 and 1-23, Express is uncertain whether it requires air quality permits from the Montana DEQ or the Wyoming DEQ for electrically driven pumps (see page 4-19).

(7) On page 1-13, under Wyoming Highway Department, Encroachment permit, it is Express' understanding that encroachment permits are now issued by the Wyoming Department of Transportation rather than the Wyoming Highway Department.

k.1. You are correct. The requirement has been deleted from Table 1.

k.2. You are correct. The requirement has been deleted from Table 1.

k.3. You are correct that the BLM will issue the right-of-way grant of BOR lands. However, the BOR will still retain issuance for specific licenses such as canals and electric transmission lines.

k.4. You are correct. The reference has been deleted.

k.5. You are correct. These requirements have been added to Table 1.

k.6. Because of the very low emission level of fugitive VOC emissions from these pump stations (approximately 66 pounds per year), a permit exemption will probably be granted by both states. However, the air quality departments in both Montana and Wyoming will consider issuance of a permit for fugitive VOC emissions.

k.7. You are correct. The change has been made on Table 1.

Page reference

Comment

(8) On page 1-14, under Wyoming State Engineer's Office, Surface water appropriation permit, the agency action referenced is for issuance of a license for encroachment on state highways. Express believes that the reference action should be issuance of a license to appropriate surface water, not encroach on state highways.

(9) On page 1-14, under Wyoming Office of Historic Preservation, Section 106 NHPA Consultation, the words "and FERC" should be deleted.

(10) On page 1-14, the reference to Wyoming "Conservation Districts" is unclear. Express is not aware of such agencies in Wyoming.

Express cannot verify that the above list identifies all of the discrepancies in Table 1 and therefore requests that the table be verified for completeness and accuracy for inclusion in the Final EIS.

2-9 (para. 2)

As discussed in Section I of these comments, Express understands that although the "Trenching the Missouri River Alternative" was dropped from further consideration, such alternative would be utilized as a contingency to a failed directional drill. In this regard, Appendix K of the DEIS specifically discusses trenching the Missouri River in the event of a failed directional drill. Express understands that a failed directional drill is recognized after two unsuccessful attempts.

Accordingly, Express proposes that the last sentence of the referenced paragraph be modified to read as follows: "Because of these anticipated impacts in a designated Wild and Scenic River with habitat for the pallid sturgeon, a fish listed under the Endangered Species Act, this alternative was dropped from further consideration as the preferred alternative, however, it was evaluated as a contingency alternative and would only be utilized in the event of a failed directional drill."

2-12 to 2-22

Express addresses the "Economic Analysis of System Alternatives to Express" in Section III of these comments.

2-41 (para. 5, 1. 5)

Change "Wyoming" to "Montana."

k.8. You are correct. The change has been made on Table 1.

k.9. You are correct. The deletion has been made on Table 1.

k.10 These agencies are in Wyoming. However, the reference to issuance of floodplain permits is incorrect. However, a line has been added for this function under the Montana agencies.

l. See comment 140 g.

	Page reference	Comment	
m	2-46 (para. 4, l. 5)	Express proposes to patrol the right-of-way on a bi-weekly basis which it believes is in accordance with proper pipeline maintenance practices. Therefore, Express requests that the reference to "weekly" be changed to "bi-weekly".	m. Neither the BLM or DEQ has objections to this change. Text has been changed on page 2-46
	2-50 to 2-55	The proposed variations identified as part of Alternative 3 have been addressed in Section I of these comments.	
n	3-3 (Table 5)	Change word in table heading from "Intensity" to "Instability" Express understands that the milepost references and descriptions of slope instability for Wyoming are incorrect. Express suggests that this section of the table be replaced with the following insert:	n. Comment noted and included on Page 3-3, Table 5.
	416.7 - West Kirby Creek 417.2	An area of active slumping to the west of the proposed Express pipeline has been avoided by routing the proposed pipeline up a stable sloping bench.	
	3-14 (para. 3, ll. 3-4)	Express believes the following wording more accurately describes the referenced stream evaluations and suggests that the sentence be changed to read as follows: "The sites of the proposed crossings for the largest of these streams have been evaluated for lateral and bed scour potential associated with a 100-year flood."	o. The suggested text has been added to page 3-14.
o	3-14 (para. 3, ll. 7-10)	It is Express' understanding that the evaluations of scour potential do not indicate that the Milk River and Arrow Creek would substantially scour their streambeds or that a 100-year flood would scour a substantial portion of the stream banks in all streams outside the channel. The studies indicate that there is the potential for substantial bed scour at Milk River or Arrow Creek and for lateral scour in many of the streams associated with the 100-year flood. The potential for bed and lateral scour was conservatively estimated based on established hydraulic methods and aerial photo interpretation. In many cases, there may in fact be little or no bed or lateral scour associated with the 100-year flood. Accordingly, Express believes the following sentences overstate the results of the evaluations that were conducted and requests that the sentence beginning on line 7 "However,	

Page reference

Comment

such an event . . . channel (Table 11)." should be modified as follows: "However, such an event in the Milk River or Arrow Creek would substantially scour their streambeds. Evaluations of potential lateral scouring in all streams indicate a 100-year flood would scour a substantial portion of the stream banks outside the active channel (Table 11)."

3-37 (Table 11)

Table heading should be revised to read "Estimated Potential Extent of Lateral Scour".

Express suggests that the following changes be made to Table 11:

(1) Revise footnote 3 to read as follows: "Further geotechnical studies are in progress to establish the nature of the subsurface bed material and potential depth of scour."

(2) A determination of the potential for bed scour at the Milk River has not been completed at this time, pending the results of planned drilling at the crossing. Therefore, the estimated depth of bed scour of 22 feet for the Milk River should be replaced by footnote 3.

(3) The pipeline burial lengths reflect preliminary design data for the Altamont project which is offset from the Express Pipeline route. The table should be revised to include proper pipeline burial lengths for Express.

*A revised version of Table 11 is included as Exhibit A herein.

3-39 to 3-42
(Table 12)

Express believes that the descriptions in Table 12 concerning the Wyoming Department of Environmental Quality (WDEQ) Water Use Classification and the Wyoming Game and Fish Department (WGFD) Stream Classification require clarification. Express suggests that the changes noted below be made to Table 12.

The "7" appearing under "Flow Class" for four streams in the "Shoshone River Sub-Basin" is incorrect and should be replaced by the appropriate symbols from footnote 6 of Table 12.

3-40

"Kirby Creek" is a State Fishery Class "IV" rather than the Class V referenced in Table 12.

p. Following BOR and BLM approval, Express conducted a limited drilling program on the south side of the Milk river along the centerline of the proposed pipeline route in October 1995. The purpose of the drilling program was to establish the depth and nature of the valley fill and underlying bedrock. All three of the borings encountered soft, saturated sand, silt and clay that extends to depths of 46 feet or greater. Immediately adjacent to the river the valley fill extends to depths greater than 60 feet. The fine grained bed material is highly susceptible to scour and the absence of a coarse gravel or bedrock layer might result in deep scour during extreme flow events. A revised scour depth calculation of 32 feet has been based on the site specific drilling information conducted by Terracon Western, documented in Terracon's Report on Geotechnical Investigations of the Milk River Crossing, prepared for Express Pipeline Inc. Table 11 has been revised based on this investigation.

q. The suggested changes have been made to Table 12.

Page reference

Comment

Express understands that most of the streams in Table 12 would be classed as Class V under the "State Fishery Class" heading, but the Notes at the end of the table do not describe either a Class V or a Class II stream. Express suggests that the Notes be revised as suggested below.

3-41 (Note 1)

"1 Wyoming Surface Water Classes (WDEQ 1990)

Class I: Those surface waters in which no further water quality degradation by point source discharges other than from dams will be allowed.

Class II: Those surface waters, other than those classified as Class I, which are determined to support game fish; or have the hydrologic and natural water quality potential to support game fish; or to include nursery areas or food sources for game fish.

Class III: Those surface waters, other than those classified as Class I, which are determined to be presently supporting nongame fish only; or to have the hydrologic and natural water quality potential to support nongame fish only; or to include nursery areas or food sources for nongame fish only.

Class IV: Those surface waters, other than those classified as Class I, which are determined to not have the hydrologic or natural water quality potential to support fish and include all intermittent and ephemeral streams. Class IV waters shall receive protection for agriculture uses and wildlife watering."

The above water quality descriptions are the WDEQ designations, not the WGFD designations as referenced in the DEIS.

3-41 (Note 2)

Note 2 contains an incomplete description of the different classes of streams. Express suggests modifying Note 2 to include the WGFD 1991 Stream Classification and Inventory descriptions as follows:

"Class I: Premium trout waters - fisheries of national importance.

Class II: Very good trout waters - fisheries of statewide importance.

Class III: Important trout waters - fisheries of regional importance.

Page reference	Comment	
	Class IV: Low production trout waters - fisheries frequently of local importance, but generally incapable of sustaining fishing pressure.	
	Class V: Very low production trout waters - often incapable of sustaining a trout fishery."	
q 3-41	"Twelvemile Draw" is a State Water Use Class "IV" rather than the "UV" referenced in Table 12.	
3-41 (Note 3)	Note 3 should be revised to read "Fish Species Codes" rather than "Fish Species Cods".	
3-43 (Table 13)	Express does not cross Rock Creek in Wyoming. Accordingly, the referenced information should be deleted.	
r 3-46 (Table 15)	The second sentence in footnote 1 should be revised as follows: "The maximum potential scour depth in bedrock is estimated to be one foot."	r. Comment noted and included in footnote 1 to Table 15, page 3-46.
s 3-63 (para. 6, 1. 2)	To distinguish between the town site and the river, insert "the town of " before "Powder River."	s. Comment included on page 3-63.
t 3-70 (para. 4, 1. 1)	Express suggests changing the first sentence to read as follows: "Several federally-listed threatened or endangered wildlife species potentially occur along the Express route."	t. Comment included. Text changed on page 3-70.
u 3-70 (para., 1. 1)	Change "Pole" to "Pine."	u. Comment included. Text changed on page 3-70.
v 3-71 (para. 4)	Express understands that the first sentence of the section discussing Peregrine Falcons is inaccurate and Express suggests deleting the sentence and replacing it with the following: "No known historical or active peregrine falcon <i>eyries</i> occur within miles of the proposed pipeline route."	v. The text states "There are no known <i>eyries</i> along the pipeline route" is based on the biological data incorporated from the Altamont Natural Gas Pipeline EIS (FERC 1991) and the Amoco Carbon Dioxide EIS (BLM 1989). No known <i>eyries</i> were observed within 0.5 miles of the pipeline route. The statement "No known historical or active peregrine falcon <i>eyries</i> occur within <i>miles</i> (emphasis added) of the proposed pipeline" cannot be substantiated without specific surveys.
w 3-88 (para. 2)	Express suggests deleting the last sentence of this paragraph as it does not refer to land along the proposed Express route (i.e., delete "The proposed pipeline route is near the first oil well in Wyoming drilled in 1884 near Lander (MP 489.0)").	w. Comment included. Text reference to the first oil well on page 3-88 has been deleted.
x 4-2 (para. 6, 1. 3)	The reference to "Table 6" is incorrect and should be changed to "Table 5".	
y 4-3 (para. 1, 1. 1)	Based on Express' suggested revision to Table 5 at page 3-3, the reference to "West Kirby Creek (MPs 417.0-417.1 and MPs	x. Comment included. Reference to Table 6 on page 4-2 has been changed to Table 5.

	Page reference	Comment	
y		417.8-418.1)" is not applicable to the Express project and should be deleted.	z. Comment included. See response to comment 140 n. Text deleted from Table 28 on page 4-3.
z	4-3 (Table 28)	Based on Express' suggested revision to Table 5 at page 3-3, the references in the table to mileposts 417.0 - 417.1 and 417.8 - 418.1 are not applicable to the Express project and should be deleted.	
aa	4-4 (para. 2, ll. 6-7)	Express believes the sentence discussing surface faults (beginning on line 6) is overstated. Express suggests deleting the sentence and substituting the following explanation: "Passing within five miles of active or potentially active surface faults is a significant hazard only if fault movement would result in liquefaction-induced ground movement (principally lateral spreading and flow slides) of a magnitude sufficient to rupture the pipeline. The pipeline in this reach is not located in liquefiable soils or along unstable slopes that would dramatically fail as a result of the projected fault movement."	aa. Comment has been incorporated into Surface Faulting discussion on page 4-4.
bb	4-12 (para. 2, ll. 1-3)	Express believes the sentence beginning on line 1 explaining placement of the pipeline in streams and rivers having designated floodplains is inaccurate and should be revised as follows: "For streams and rivers in Montana having designated floodplains (see Table 11 in Chapter 3), Express would be required to place the pipeline a minimum of four feet or twice the estimated depth of scour for the 100-year flood below the minimum thalweg of the stream or river."	bb. For streams and rivers in Montana having designated floodplains (see Table 10 in Chapter 3), Express would be required to place the pipeline twice the estimated depth of scour for the 100-year flood below the minimum thalweg for the river or stream and at a minimum depth of four feet. Calculated scour depths for some of the designated floodplains are shown in Table 11 in Chapter 3. Estimated depths of bed scour are three to eight feet for most of the designated floodplains. Geotechnical investigations of the Milk River crossing indicates a maximum scour depth of 16 feet below the minimum bed elevation in the alluvial materials for the 100-year flood event.
	4-12 (para. 3, ll. 2-6)	The reference to a 22 foot scour depth at the Milk River and the absence of bedrock in the valley floor is incorrect. The sentence beginning on line 2 should be revised as follows: "The potential depth of scour at Milk River will be established based upon the results of a geotechnical drilling program at the crossing location planned for Fall 1995."	cc. Paragraph 2 on page 4-17 has been changed to read: "An oil spill in or near major rivers or streams would have a significant impact to water quality. The degree of impact would depend on the location containment basins, volume and rate of spill, streamflow, stream gradient and turbulence, type of stream bottom, response time, and the effectiveness of cleanup. During low flow, oil spilled into the rivers and streams would be more concentrated in a smaller area downstream from the location of the spill. Water would be contaminated from the hydrocarbon content and result in significant effects to fish, riparian vegetation, and terrestrial wildlife whose habitat would be adjacent to water. If a spill would occur during periods of high flow, the contamination would spread to greater distances, but the concentration of hydrocarbons in the water could be less at any given downstream location."
CC	4-17 (para. 2, l. 2)	Express believes the sentence on line 2 beginning "The degree of impact . . ." may not be true in all cases. Express suggests deleting this sentence and inserting paragraph 3 from page 4-38 as follows: "The progression and fate of oil in mountain streams is difficult to assess. It depends on the location of containment basins, volume and rate of a potential spill,	

	Page reference	Comment
cc		streamflow, stream gradient, type of stream bottom, and the effectiveness of the cleanup."
	4-18 (para. 1, 1. 1)	Insert "Minimal or trace" before "Emissions."
	4-18 (para. 1, 1. 2)	Delete "electric pump stations" and insert "the electrically driven pumps."
	4-18 (para. 2, 1. 4)	Delete "valves" and insert "sites along the pipeline route."
	4-18 (para. 6, 1. 2)	Delete "shutoff" and insert "mainline block" before "valves."
dd	4-18 (para. 6, 11. 2-3)	Change sentence to read as follows: "However, trace fugitive VOC emissions, may be attributable to the evaporation of crude leaked from pump seals or sump tanks."
	4-19 (para. 1, 11. 1-2)	Express notes that the discussion with respect to resulting emissions is inaccurate and suggests deleting lines 1 and 2.
	4-19 (para. 1)	Express notes that some of the references leakage sources are incorrect and suggests deleting bullet points 1, 2, 4, and 5.
	4-20 (para. 4, 1. 2)	Delete "phase" and insert "and operation phases" after "construction."
	4-20 (para. 5, 1. 2)	Delete "electric pump stations" and insert "the electrically driven pumps."
ee	4-25 (para. 4, 1. 1)	Express understands that 75 feet would be the minimum construction right-of-way width for wetlands unless site specific conditions require otherwise. Therefore, Express suggests inserting "no" before "less than."
	4-28 (para. 2, 11. 4-6)	Express notes that all riparian and wetland areas crossed by the Express Pipeline route would be small, narrow, linear stands. Therefore there are no "... interior species that require large tracts of unfragmented habitat to ensure breeding and nesting success." Therefore, this impact as presented is not applicable to the Express Pipeline and Express suggests deleting this sentence.
ff		

dd. Comments included on pages 4-18, 4-19 and 4-20.

ee. Comment included. Text changed on page 4-25.

ff. Comment noted. Page 4-28, second paragraph, third sentence has been changed to read, "The wildlife species that would be mostly directly affected by the clearing of riparian vegetation would be those species that require woody habitats for breeding and rearing."

Page reference	Comment
gg 4-29 (para. 1, l. 3)	Change "Crucial Year Round Winter Range" to "Crucial Winter/Year Round Range"
hh 4-29 (para. 1, ll. 6-8)	Express requests that the surface disturbance restrictions be limited to mainline construction activities as discussed earlier in Section I on the Wildlife Timing Limitations Alternative.
ii 4-29 (para. 5, l. 4)	Change "Crucial Year Round Winter Range" to "Crucial Winter/Year Round Range."
4-30 (para. 2 through para. 6)	Express believes that the discussion on "Sage Grouse" inaccurately represents sage grouse ecology, thereby leading to potentially unnecessary route realignments around sage grouse leks. Accordingly, Express suggests that this section be revised as follows: "Sage grouse leks (also called arenas or strutting grounds) are unquestionably an important part of sage grouse reproductive ecology, but the great majority of these sites are located within or adjacent to stands of sagebrush (Patterson, 1952). Indeed, the Western Association of State Game and Fish Commissioners' guidelines for maintenance of sage grouse habitats (Braun et al., 1977) focused on the importance of sagebrush habitat for sage grouse. Efforts to recover sage grouse in formerly occupied range (e.g., Welch et al., 1990) have emphasized the need to rejuvenate or replace sagebrush habitat. Thus, the critical habitat component for sage grouse is sagebrush, not the lek site itself. Because of the complex visual and aural mating system of sage grouse (Hartzler, 1972; Wiley, 1978), leks are usually open sites surrounded by sagebrush. While some leks may be used each spring for many years (Wiley, 1978), others are quickly developed or abandoned (Connelly et al., 1981). Often, leks develop on sites of human disturbance within large stands of sagebrush; for example, Connelly et al. (1978) documented leks that developed in burned sagebrush habitat, and in gravel pits within sagebrush habitat. Similarly, on or immediately adjacent to the Express route, Express' consultants observed sage grouse using an old landing strip and existing pipeline rights-of-way.

gg. Comment included. Crucial Year Round Winter Range has been changed to Crucial Winter/Year Round Range throughout the EIS.

hh. See response to comment 140 c.

ii. Comment included. See response to comment 140 gg.

jj. There is a difference of opinion among biologists concerning construction impacts to sage grouse leks. Your information is noted without changing the EIS. All identified leks in the Lander Resource Area are on private land, and the BLM would not require any re-routing of the proposed pipeline. The avoidance of leks is only applicable in the Lander Resource Area, approximately mileposts 420 to 441.

Further, sage grouse often move between leks during the breeding season, sometimes from day to day (Emmons and Braun, 1984; Hayden-Wing et al., 1986). Consequently, leks are often relatively close together. For instance, several of the lek locations in Appendix E of the Express DEIS are within 1 to 3 miles of each other. Inter-lek movement also suggests that the number of leks in an area is a better index to the overall sage grouse population than the numbers of males per lek (Emmons and Braun, 1984).

Thus a lek site itself is not critical to sage grouse biology. It is even possible to create lek sites and attract sage grouse to them, in effect artificially moving a lek from one place to another (Phillips et al., 1986; Welch et al., 1990).

However, sage grouse breeding at a lek is critical to sage grouse biology (Patterson, 1952; Hartzler, 1972; Wiley, 1978; etc.). It is important to protect the lek from prolonged disturbance during the breeding season; continuously disturbed breeding behavior may result in the abandonment of the lek and perhaps a decline in the local population (Braun, 1986).

Unfortunately, misunderstandings of sage grouse behavior have resulted in misconceptions about the importance of the lek site itself. For example, some BLM Resource Management Plans (RMPs) in Wyoming (such as the Lander RMP) have adopted a No Surface Occupancy (NSO) standard at an active lek; this standard protects the lek from human disturbance throughout the year. While it would be inappropriate to construct an oil or gas well on a lek (which would result in continuous disruption of breeding behavior during the mating season), an activity such as a pipeline would not be disruptive as long as it was constructed outside the breeding season. The Express DEIS recognized this with the statement (page 4-30, paragraph 5, line 3) that "...WGFD and BLM policy prohibits disturbance of leks between March 15 and May 31."

Therefore, since the Express Pipeline construction schedule will be outside the timing window of March 15 through May 31; since lek sites have been shown occur on sites disturbed by humans, including pipeline rights-of-way; and since lek sites per se are not critical to sage grouse population survival, Express believes that this section of the DEIS should be revised to accurately reflect sage grouse ecology, and that the

Page reference

Comment

jj

requirement to re-route the pipeline 0.5 mile away from the 16 leks in Wyoming (Table S-1, page S-16) should be dropped."

4-31 (Table 29)

Express believes that Table 29 should be footnoted to indicate the sources of the average dates of raptor fledging for both states. Because Express will probably not begin construction of the main pipeline until at least July 1, 1996, Express believes that it is unnecessary to survey the entire route for active raptor nests. Express suggests the following wording:

"Average dates of fledging of prominent raptor species along the Express route are given in Table 29. In most years, most species in both states will have fledged by July 15. Therefore, those portions of each construction spread that would be disturbed prior to July 15 would be surveyed for active raptor nests prior to disturbance. The construction schedule would be modified to avoid known active nests of certain raptor species until July 15 or sooner if the chicks have fledged. Any active or inactive known nests of Federally listed or proposed threatened or endangered species would be avoided."

Express notes that this comments also applies to the discussion at page 1-9, paragraph 5 and page 4-30, paragraph 7, line 4.

4-32 and 4-33

Express suggests that the "Wildlife Timing Restriction Alternative" be modified in accordance with the suggestions in Section I of these comments.

4-33

(para. 2, II 6-7)

Based on the above comments on raptors, Express suggests deleting the sentence on lines 6 and 7 beginning "The entire pipeline ...".

4-35

(para. 2, II 1-3)

Express believes this sentence should be revised to coincide with the fisheries occurrence information presented in Table 8, i.e., that there are no brown trout in Ross Fork or the North and South Forks of Bluewater Creek. For example, the North and South Forks of Bluewater Creek are ephemeral at Express' crossings, so brown trout spawning would certainly not be expected at these locations.

kk. Table 29 has been accurately footnoted to reflect the source of the average fledging dates. However, these dates only indicate the average fledging dates, which could vary depending on weather conditions.

The BLM and DEQ will require pre-construction surveys for suitable habitat along the entire pipeline route. The surveys will be accomplished to identify T&E species habitat, especially prairie dog colonies of sufficient size for black-footed ferret potential habitat, and active raptor nests. Where the suitable habitat is identified, detailed surveys will be carried out.

In August, 1995, Westech completed a helicopter aerial survey of the proposed pipeline route in Montana. Westech had previously surveyed this route for Altamont in 1992. The altitude of the helicopter was from 50 to 300 feet above the ground for the entire survey. No prairie dog colonies were found from the Canadian border in Milepost 198. Two colonies were found intersecting the right-of-way near MP 198, a few miles south of Shawmut, Montana. The size of the combined colonies was only 17.5 acres. This colony had decreased from approximately 82 acres as surveyed in 1992. Apparently, this colony has been controlled by the landowner. Another colony was found near MP 278, about seven miles east of Bridger, Montana. The size of this colony was about 32 acres. This colony had decreased from approximately 284 acres as surveyed in 1992. Like the other colony, this colony appeared to have been controlled by the landowner. A seven-kilometer area around these colonies was flow to check for other colonies which may form a complex colony. No other prairie dogs were found.

Based on the 1995 Westech survey and conversations with the USFWS in Montana, no further surveys for black-footed ferrets will be required in Montana. In Wyoming, the route still has to be surveyed.

II. See response to comment 140 kk.

mm. Comment included. Text has been changed on page 4-35.

Page reference	Comment	
nn 4-35 (para. 4, ll. 8-9)	Express notes that the DEIS appears to confuse Nowater Creek with the Norwood River. Sturgeon reintroduction is not proposed for Nowater Creek. Therefore, it would not be possible for Express' crossing to affect sturgeon fry at this site and the sentence beginning on line 8 should be revised as follows: "Express' proposed crossing of the Greybull, and Bighorn Rivers may affect the shovel-nose sturgeon fry if construction is conducted before July 15."	nn Comment included. Text has been changed on page 4-35.
oo 4-37 (para. 3, l. 4)	Insert "small" before "spills."	oo. Comment included. Text has been changed on page 4-37.
pp 4-38(para. 5, ll. 1-3) and 4-39(para. 1, ll. 1-2)	Express notes that the first paragraph under the heading "Timing Restriction Alternative" contains some inaccuracies which should be corrected. The North and South Forks of Bluewater Creek are ephemeral and therefore do no support spawning trout, and since Ross Fork does not support spawning trout (Table 8), construction timing restrictions on these drainages are unnecessary. Also, Express understands that authority to impose timing restrictions rests with the MDEQ under the Major Facility Siting Act, rather than with the Montana Department of Fish, Wildlife and Parks, and Express suggests that this paragraph be modified accordingly.	pp. Comment included. The last paragraph on page 4-38 has been changed to read: "As a part of the river and stream crossing evaluations, the MDFWP has indicated that they would prefer and DEQ would recommend to the Board, that river and stream crossings to be completed between August 1 and November 15 unless otherwise indicated in Appendix O.
qq 4-43 (para. 3, ll. 1-2)	The Express Pipeline route does not cross the Green River. The sentence beginning on line 1 should be revised to read as follows: "Bald eagles occur as migrants and may winter in Wyoming, along the Greybull and Bighorn Rivers, Nowater Creek, and Pine Mountain."	qq. Comment included. Text has been changed on page 4-43.
rr 4-45 (para. 2, l. 1)	Add "or qualified wildlife biologist" after "inspector"	rr. Comment included. Text has been changed on page 4-45.
ss 4-45 (para. 2, l. 4)	Change "prior to" to "at"	ss. The BLM prefers the inspections to take place before construction commences.
tt 4-45 (para. 4, ll. 5-7)	While Express does not anticipate that the directional drill of the Missouri River will fail, it cannot be unequivocally concluded that the drill will be successful. Delaying crossing the river by other methods would require a minimum of one year to implement surveys for pallid sturgeon and would be extremely burdensome and might affect the viability of the entire project. Express believes such a delay might be unnecessary, since previous searches for the sturgeon at the	tt. See response to comment 140 g.

Page reference

Comment

proposed crossing were unsuccessful, and since the crossing could be timed to minimize the impact to the pallid sturgeon. Therefore Express suggests that the sentence beginning on line 5 be revised as follows: "If the directional drilling technique would fail, resulting in the need for a crossing by other methods, the BLM and Express would immediately confer with the USFWS to ensure that those crossing methods, including any mitigation measures, would minimize and mitigate any potential effect to the pallid sturgeon."

uu. The piping plover is a listed species; therefore, an active nest cannot be disturbed. BLM agrees that a pre-construction survey should only be required in suitable habitat (sand and gravel bars or beaches of lakes and rivers) for the piping plover. However, an active nest cannot be disturbed until chicks have fledged. Text has been changed on page 4-45.

4-45

(para. 5, ll. 3-8)

Express believes the sentence beginning on line 3 stating "The entire pipeline route . . ." to the end of the paragraph should be revised. The suggested mitigation is inappropriate for several reasons:

- (1) the piping plover is not a raptor (bird of prey);
- (2) any raptor nest surveys would likely occur in April, before piping plovers begin to nest;
- (3) as pointed out in Chapter 3 (page 3-71), piping plovers are habitat specific (sand and gravel bars or beaches of lakes and rivers), thus there is no need to survey the entire Express route;
- (4) piping plovers have not been documented along the Express route (page 3-72);
- (5) piping plovers nest in June and July, and the young have usually migrated by late August (Prellwitz *et al.* 1995). Therefore, there is no need to restrict pipeline construction activity from February 1 through August 31. During much of this timing restriction, piping plovers are probably not even present in Montana and Wyoming;
- (6) piping plovers are relatively tolerant of nearby activity. Researchers have approached to within 15 m (about 50 feet) of nests without eliciting alarm behavior from nesting birds (Prellwitz *et al.* 1995). Therefore, a 0.5 mile buffer around active nests is very unrealistic;
- (7) piping plovers nest in small depressions in the ground. These sites are apparently not used year after year. If necessary, it would probably be easier to move piping plover nests small distances (Prellwitz *et al.* 1995) than to "slightly

Page reference

Comment

realign" a pipeline the size of Express for a transient nest site that might never be used again.

Express suggests that these sentences be revised as follows: "Prior to construction (June to mid-July), Express would inventory those portions of the right-of-way that cross appropriate habitat for nesting piping plovers (sand and gravel bars and beaches at river and stream crossings). If nesting piping plovers were found within the right-of-way, appropriate authorities (i.e., BLM and USFWS) would be notified immediately. Depending on the construction schedule for that particular stream crossing, it may be possible to delay the crossing until the nest has hatched. If not, Express would confer with BLM and USFWS to move the nest or implement other appropriate mitigation measures."

Citation:

Prellwitz, D.M., K.M. Erickson and L.M. Osborne, 1995. Translocation of piping plover nests to prevent nest flooding. Wildl. Soc. Bull. 23(1): 103-106.

4-45 (para. 6, l. 1)

and

4-46(para. 1, ll. 1-5) Express believes the mitigation identified in the sentence beginning on line 1 of paragraph 6 on page 4-45 (i.e., "The entire pipeline route . . . for nesting and rearing") is inappropriate for several reasons:

(1) the least tern is not a raptor (bird of prey);

(2) any raptor nest surveys would likely occur in April, before least terns begin to nest;

(3) as stated in Chapter 3 (pages 3-72), least terns are habitat specific (broad expanses of unvegetated river channel, sparsely vegetated sandbars, suitable levels of water, and adequate supply of small fish for food). The most likely habitat is the Yellowstone River crossing. Thus there is no need to survey the entire Express route;

(4) a proposed mitigation for the piping plover appears to have been accidentally transposed to the discussion of least terns; and

vv. The BLM agrees with this approach for pre-construction surveys. To determine the impact of construction on the least tern, only suitable habitat (broad expanses of unvegetated river channels, unvegetated sandbars, suitable levels of water, and adequate supply of small fish) for the least tern must be surveyed. Comment (4) has been included. The text starting "There would be no construction . . ." to the end of the paragraph has been deleted on page 4-46.

Page reference

Comment

(5) least terns have not been documented along the Express route (page 3-72).

Express suggests that these sentences be revised as follows: "Prior to construction (June to mid-July), Express would inventory the Yellowstone River crossing for nesting least terns. If nesting least terns were found within the right-of-way, appropriate authorities (BLM and USFWS) would be notified immediately. Depending on the construction schedule for the crossing, it may be possible to delay the crossing until the nest has hatched. If not, Express would confer with BLM and USFWS to implement appropriate mitigation measures."

4-46

(para. 3, ll 4-9)

Express strongly disagrees with the mitigation measures discussed in the sentence on line 4 beginning "The entire pipeline route . . . active breeding nests would not be removed." because:

(1) the mountain plover is not a raptor (bird of prey);

(2) any raptor nest surveys would likely occur in April before mountain plovers begin to nest;

(3) the mountain plover is currently a Category One species but it does appear that it will be listed as either threatened or endangered (page 3-72). At present, therefore, it does not receive special protection under the Endangered Species Act;

(4) It is highly unlikely that mountain plovers nest at the same site from year to year. Thus a route realignment to avoid a transient nest site would not offer long-term mitigation; and

(5) at the low densities of this species in its preferred habitat, and low acreages of habitat to be affected by the Express Pipeline, only a very few nests (approximately 4) could possibly be affected by the construction of this project.

There is no evidence presented in the DEIS to justify that such a loss would be significant enough to substantiate the proposed mitigation. Express recommends that references to surveying the route for mountain plover nests, and realigning the route or adjusting the work plan to avoid nests, be deleted from this discussion because the impact without these mitigation measures would be insignificant.

ww The BLM agrees that only suitable habitat will be surveyed before construction begins. Avoidance of active nests would not be required on private lands. Mitigation of active nests on public lands would be conducted on a case-by-case basis in consultation with the BLM and the USFWS.

Avoidance of active nests would not be required on private lands in Wyoming. In Montana, DEQ recommends that construction be deferred in areas with active nests until young have fledged if surveys of suitable habitat find nesting birds.

Page reference Comment

4-49 (para. 5, l. 3) Delete "electric pumping stations" and insert "electrically driven pumps."

4-50
(para. 5, ll. 2-3) The sentence on line 2 beginning "The project would also cross ..." is incorrect and should be stricken.

4-51 (para. 2 & 3) The discussion on the "South-Central Montana Alternative" should be revised in accordance with the comments in Section I.

4-53 (para. 6, l. 1) Insert "mainline block" before "valves."

4-53 (para. 6, l. 4) Delete "electric pumping stations" and insert "electrically driven pumps."

XX

4-53 (para. 6, l. 5) Insert "Mainline block" before "valve."

4-54 (para. 5, l. 4) Insert "block" after "mainline."

4-54
(para. 5, ll. 2-4) Delete sentence on line 2 beginning "Mainline valves typically..."

4-63 (para. 1, l. 1) Insert "operational" before "field."

4-63 (para. 3, l. 2) Add "per spread" after "day"

yy

4-70 (para. 3, l. 4) The sentence beginning on line 4 indicates that the Programmatic Agreement (PA) is included as Appendix L. Express requests that the signed PA be included as part of the Final EIS.

zz

4-72 (para. 3, l. 2) Strike "or directional drilling"

4-72 (para. 3, l. 4) Add "and where the setting is not previously compromised" after "NRHP"

aaa

4-78 (para. 2, l. 2) Change sentence beginning "The mainline ..." to read as follows: "The mainline block valves would be located, wherever feasible, at minimum distances of 100 feet upstream of major river crossings, or in geographical locations closest to road and power access. Check valves would be located similarly at a downstream location."

xx. Comments included. Text has been changed in appropriate places on pages 4-49, 4-50, 4-51, 4-53, 4-54, and 4-63.

yy. The signed Programmatic Agreement (PA) is included in the FEIS as Appendix L. The signed document replaces the draft PA which was included in the DEIS.

zz. Comments included. The text has been changed on page 4-72.

aaa. Comments included. The text has been changed on page 4-78.

	Page reference	Comment
	4-78 (para. 2, i. 5)	Change sentence beginning "The block valves . . ." to read as follows: "The mainline block valves would be remotely operated at all river crossings and at select other points."
	4-78 (para. 4, i. 2)	Change sentence beginning "Every three years . . ." to read as follows: "Every three years, a surveillance program involving an internal electronic inspection tool would be conducted along the entire route to determine pipeline integrity."
aaa	4-78 (para. 4, i. 3)	Change the sentence beginning "These inspection . . ." to "The aircraft inspection . . ."
	4-78 (para. 4, i. 5)	Change "immediately" to "as soon as possible."
	4-78 (para. 5, ii. 3-5)	Change the sentence beginning "The electrical outputs . . ." and the sentence beginning "The performance . . ." to read as follows: "The electrical outputs of the rectifier installations would be inspected monthly while the performance of the cathodic protection system would be monitored by maintaining a record of rectifier voltage and current readings."
bbb	4-79 (para. 2, i. 1)	Change sentence beginning "Express' proposed . . ." to "Express' construction, operations and maintenance plans would ensure that all precautions are taken to remove the possibility of an oil spill."
	4-79 to 4-80	Delete all text under the "Spill Response Measures" section and replace with the following: "The likelihood of a major oil spill (i.e., over 500 barrels) is remote. In the event such a spill did occur, Express would be implement measures in the SPCCP that will be filed with Federal, State and County agencies along the pipeline including the BLM, MDEQ, local governments and fire departments. An outline of the SPCCP would be filed before construction commences."
ccc		The SPCCP would include measures on: • Handling of Emergencies - Spills, Fires and Natural Disasters. • Safety, Training and First Responder Response. • Emergency Shutdown - call down and contact lists (e.g., internal, industry and others).

bbb. Comment noted but BLM and DEQ do not agree. The wording "remove the possibility of an oil spill" implies a certainty that does not exist. BLM and DEQ acknowledge that Express will take all precautions to prevent a spill. Still, a spill might occur.

ccc. Comment noted but not included. The complete SPCCP must be filed and approved by all federal, state and local agencies before construction begins. An expanded SPCCP outline is included as an appendix to the EIS.

	Page reference	Comment	
CCC		• Containment and Recovery. • Manpower and Emergency Equipment - location, availability, contractors and suppliers. • Communication with Regulatory and Local Authorities."	
ddd	4-82 (para. 2, ll. 3-7)	The section on "Surface Faulting" should be revised to reflect the variability of the appropriate mitigative measures available to protect against surface faulting. Express suggests that the text beginning on line 3 with "If evidence of . . ." to the end of the section be revised as follows: "If evidence of Holocene surface displacement is found, Express would implement appropriate design measures. Appropriate design measures for any fault crossing are dependent upon many factors including the age of the last fault movement, frequency and displacement and fault type. Appropriate design measures may include a V-shaped trench, granular backfill, heavy-walled pipe, avoidance of anchoring appurtenances such as mainline block valves, concrete anchor blocks, etc. or simple monitoring."	ddd. Comment included. Text has been changed on page 4-82.
eee	4-83 (para. 4, l. 1)	Delete "and additional temporary work space."	eee. Comment included. The phrase "and additional temporary work space" has been deleted on page 4-83. The sentence "Temporary work space may be required at some river crossings" has been inserted.
fff	4-83 (para. 4, l. 3)	The sentence at line 3 should be revised to read as follows: "However, at no time are the staging areas to be located closer than 50 feet to the stream bank unless permission is granted from the appropriate agency based on a site specific drawing."	fff. Comment included. Text has been added on page 4-83.
ggg	4-83 (para. 6, l. 1)	Revise the first sentence to read as follows: "All disturbed land would be restored to the original contours where practicable."	ggg. Comment included. Text has been revised on page 4-83.
hhh	4-83 (para. 7, l. 1)	Revise the first sentence to read: "The pipeline route has been re-routed around rock outcroppings wherever practicable."	hhh. Comment included. Text has been revised on page 4-83.
iii	4-89 (para. 3, l. 1)	Change "probability" to "possibility of."	iii. Comment noted but the BLM disagrees. The probability of a future occurrence is based on the statistics of past performance. Without the consideration of past events, any future event is possible.
jjj	Appendix G	Reference should be revised to: "Report of Investigations, Scour Analyses, Altamont Gas Transmission Company, Prepared by HKM Associates, Billings, Montana, Dan Nebel, Project Manager."	jjj. Comment included. The title of Appendix G has been changed.

Section III - Response to Economic Impact of Alternatives Analysis

The "Economic Analysis of System Alternatives to Express" is set forth in Chapter 2 at pages 2-12 through 2-22 and, in part, in the Executive Summary, pages 5-4 through 5-8. As noted in the introduction on page 2-12, this analysis was performed to assist the Montana Board of Environmental Review (BER) in evaluating the proposed Express project under Montana's Major Facilities Siting Act (MFSA). Express understands that the analysis is intended to supplement Alternative 1 which assesses impacts in the event that the Express project is not authorized.

Express believes that certain information in the analysis of alternatives is incomplete because it does not identify the limitations associated with the alternative projects nor does it identify the benefits that will be realized by the Express project as compared to these alternatives. Express believes it is necessary to identify these limitations and lost benefits in order to fully assess the impact of Alternative 1, the No Action Alternative. Accordingly, Express is providing below additional analysis and information that it believes will assist the BER in finding under the MFSA that the Express project will minimize environmental impacts, given the state of available technology and the nature and economics of the alternatives. Express also believes that its proposed project will ensure minimal environmental, natural resource and social impacts in accordance with Montana law.

Fundamentals of the Express Pipeline Project

(1) Declining Production and Growing Markets - The market assessment conducted by Express indicates that crude oil production is declining in the United States. Coupled with a 1.7% rate of growth in the Rocky Mountain (PADD IV) market and a demand for additional crude in both the PADD IV and Midwest (southern PADD II) markets, an opportunity exists for additional barrels of crude oil to access these markets. The objective of the Express Pipeline is to present a viable alternative to satisfy the crude oil demand of the PADD IV and PADD II refiners.

Crude oil production in PADD IV has been declining at an average rate of 6.5 percent per year since 1991. In 1994, production from this region declined by 35,000 BPD, or 8.5%. This region needs a significant new source of crude supply to offset experienced and projected crude declines and to meet the existing refining requirements. If significant new crude supplies are not developed, some refiners will likely be forced to shut down, resulting in this market being permanently lost to refined product imports from other regions of the U.S. and increasing dependence on refined products and product pipelines from other regions. Express will provide the necessary transportation link to ensure that a preferred slate of crude supply is available to this growing market.

Production of light sweet crude oil by PADD IV producers is declining and current pipeline transportation to PADD IV is insufficient to meet the crude slate refining requirements of the Salt Lake City area refiners. These refiners represent approximately 30% of the PADD IV region's 503,000 BPD of refining capacity. Salt Lake area refiners run a slate of ultra-sweet crudes, of which Canadian synthetic crude oil would be a replacement. As such, Express will offer access to the preferred slate of crudes to meet the demand of Salt Lake City refiners.

(2) Access to a Diversified Crude Slate - Express is designed to handle all the major crude types produced in Western Canada. Express accesses 80% of all crude oil produced in Western Canada and all major crude types. The pipeline is designed to transport crude types in segregated batches to minimize crude oil contamination. The capability to ship multiple crude types in segregated batches is a key advantage to the Express pipeline compared to other pipeline alternatives. This is especially important to refiners in the Salt Lake City area who require ultra-sweet crudes, such as synthetic crude oil. The flexibility offered in the design of the Express Pipeline is also important in that it matches crude types to the refinery slates in the above mentioned market areas.

(3) Cost Effective Transportation - Rates for transportation service on the Express Pipeline have been set on a market responsive basis and, when compared to alternative transportation systems, meet or beat the competition. In its analysis Express examined the rates currently charged by existing pipelines to transport Canadian crude to PADD IV and PADD II. In PADD IV, the benchmark pipeline tariff was derived from the delivery of crude by the combination of the IPL, Wascana, Texaco, and Butte pipelines to Guernsey, Wyoming. In PADD II the benchmark pipeline tariff is the delivery by the IPL, Lakehead, Mobil and Capwood pipelines to Wood River, Illinois. The current rates on these pipeline systems are shown in Tables 2.1 and Table 2.2 of Appendix A to the DEIS, respectively. Express' proposed transportation rates are attached hereto as Exhibit B.

(4) Benefits to the Refining Sector - The need for a new reliable crude oil supply is readily acknowledged by PADD IV refiners. A compatible, competitively priced, crude slate will allow the PADD IV refiners to continue to maintain their competitive position without large expenditures to alter the existing infrastructure. The additional benefits which PADD IV refiners will realize from the Express Pipeline include (1) access to ultra-sweet crudes for the Salt Lake City area refiners and a delivery system which will protect crude quality integrity; and (2) effective long term competition against refined product imports. PADD II refiners will benefit from enhanced competition, diversity of supply sources and an ability to access a reliable supply area.

Summary - Express notes that additional justification of the need for its proposed project is contained in Appendix A to the DEIS which includes Chapters 1 and 2

of Express' application to the National Energy Board of Canada for approval to construct facilities in Canada. Appendix A further details the current market situation and explains the purpose and need for the Express project.

Specific Comments on the DEIS

In addition to the above noted fundamentals of the Express project, set forth below are Express' comments on specific sections of the DEIS at pages 2-12 through 2-22. These comments are directed primarily at identifying deficiencies of the described projects as compared to Express, which Express views as critical to assessing whether these projects truly are acceptable alternatives in the event Express is not built. Express also proposes certain clarifications where appropriate. For the reasons set forth below, Express believes that these projects are inadequate as alternatives to its project.

Express Pipeline (pages 2-13 and 2-14)

kkk

2-14 (para. 1, l. 3) The proposed tariff is not an average of \$1.35 per barrel from Hardisty, Alberta to Casper, Wyoming (page 2-14, para. 1, line 3). As shown in Exhibit B to these comments, Express is offering different rates as low as \$1.10 per barrel, depending on the length of transportation contract term.

kkk Express' proposed tariffs might not yield an economically viable project if throughput volumes turn out to be lower than original projections. Express' actual tariffs might end up being higher than its proposed tariffs (see also MDEQ Response to Comment # 12, part 2).

Petroleum Industry Setting and Basis for Alternatives (pages 2-14 and 2-15)

lll

2-14 (para. 1, l. 4) Express' studies indicate that the ten (10) year actual decline rate is greater than the projected decline rate of between 4.0% and 4.4% per year for the future, and Express disagrees with the statement that the decline rate will not continue at a rate higher than 4.0% to 4.4% per year.

lll Express' long term decline rate estimate appears to be too high, and is not supported by 1995 rates, especially in Wyoming.

Scope of the Alternatives Compared to Express (page 2-16)

mmm

2-16 (para. 4) Express notes that the potential responses of producers, refiners and competing pipelines described in paragraph 4 is somewhat speculative. It is uncertain whether existing pipelines will adjust rates downward, whether producers will give up premiums, or whether competitors will make significant financial investments in response to Express. Furthermore, even if these responses were undertaken, Express does not believe they affect the justification for its project as Express is not relying on capturing crude oil transport from other pipelines. Moreover, Express assumes that existing pipelines will remain at historical throughput without expansion, Canadian production/supply will increase, and Rocky Mountain production will continue to

mmm Existing pipelines offering alternative routes for crude from Canada have already adjusted tariffs downward, and competitors have already started investments in response to Express and/or increasing demand for Canadian crude oil.

mmm

decline at a rate of approximately 7.5% rather than 4.0% to 4.4%.

Accessing Alternative Crude Oil Supplies via Other Transportation Routes

In examining the combined crude slates and capacities of the Cenex, Amoco/Conoco, and Wascana-Texaco-Butte projects, these pipelines will not sustain the Rocky Mountain refining region because they do not provide sufficient volumes of light sweet crude oil to the Salt Lake City region (which runs around 120,000 BPD), nor do they maintain crude batching integrity.

Cenex Project (pages 2-17 and 2-18)

The discussion does not recognize or explain the restrictions or limitations in accessing crudes. This system accesses medium and heavy crude primarily from southern Alberta. Although these crudes have appeal to the Billings and Laurel refiners, they do not solve the light sweet crude supply deficiency prevalent in the balance of PADD IV. In addition it does not offer access to the PADD IV market south of Laurel. Accordingly, this is not an alternative to Express.

Amoco/Conoco Project (page 2-18)

This pipeline system is limited to running two crude types (Rangeland and Bow River), and the ability of Salt Lake City refiners to run Bow River is very limited. Moreover, it is doubtful that this pipeline could access the full volume of light sweet crude in Canada because of the location of the sweet crude sources and the pipeline gathering infrastructure in Canada.

Wascana-Texaco-Butte Capacity Upgrades (page 2-18)

The Wascana pipeline currently provides transportation to PADD IV from the Interprovincial Pipeline system at Regina, Saskatchewan via connections to pipelines operated by Texaco and Butte. The Wascana system currently has a capacity of approximately 45,000 BPD. Therefore, this system cannot transport the volumes forecast for the Rocky Mountain region. Moreover, this system requires up to 9 different pipeline companies to transport Canadian crude to Salt Lake City and 5 different companies to transport to Denver or Wood River. Also, multiple pipelines of differing diameter impact the integrity of the crude. Major expansions and changes to several pipelines would be required to provide an equivalent level of service and this is not viewed as economically attractive.

Express Pipeline offers a single operator between Hardisty and Casper which will be able to better serve the requirements of shippers by reducing the number of pipelines involved and the level of contamination experienced. The magnitude of the expansions that would be required and the number of

pipelines involved may actually result in more significant environmental impacts than those identified for the Express proposal. In Express' view this is not an economically feasible alternative to Express.

Capacity and Cost of Other Potential Pipeline Projects

nnn

The analysis in this section does not take into account the competitive nature of the oil industry and assumes all competitors will cooperate to bring 50,000 to 85,000 of potential incremental capacity to the Rocky Mountain region. In addition, the analysis does not explain whether the incremental capacity available will allow for transportation of crude types required by PADD IV refiners. Finally, the analysis assumes that a 4.0% to 4.4% production decline rate is accurate, and Express believes that a higher production decline rate is likely.

Closure of Refining Capacity or Reducing Crude Runs (page 2-20)

ooo

Express believes that refinery closures will result in an increase of product pipelines into the area which could result in producers in the region being forced to move their crude production out of the area to other markets, resulting in higher transportation costs. In contrast, Express will provide refiners with a diversified crude slate thereby enhancing refiners' capability to serve the PADD IV market.

Acquiring additional refined product through import pipelines so less crude is needed (pages 2-21 and 2-22)

Olympic Pipeline (page 2-21)

ppp

Although the proposal is described as a 30,000 BPD pipeline, it is expected to replace barge traffic of 16,000 BPD moving up the Columbia River to Pasco. By displacing this volume, the net increase would be only 14,000 BPD at full capacity. Also, the target date for Olympic is after the projected in-service date for Express.

Explorer Pipeline (page 2-21)

qqq

Although Farmland is increasing capacity by 60,000 BPD, there is no indication that product will be transported to PADD IV. More product pipeline capacity would be required. The larger PADD II market is still growing and likely will need more product.

nnn The referenced section of the Draft EIS focussed strictly on the relative costs of potential pipeline alternatives to Express. Throughout the report, the analysis is based on the assumption that the oil industry is competitive. Express is correct that this section did not address whether the incremental capacity available will allow for the crude types required by PADD IV, particularly Salt Lake City area refiners.

ooo This assertion is not supported with any economic analysis. It is therefore difficult to incorporate it into MDEQ's analysis.

ppp Information supplied to the MDEQ suggests that the Olympic Evergreen refined product pipeline's expected capacity is closer to 60,000 BPD.

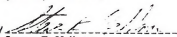
qqq Express faces significant competition for the Midwest crude market from the Seaway and IPL projects.

CONCLUSION

Express appreciates the opportunity to present its comments on the DEIS and respectfully requests that its suggested modifications be adopted in the Final EIS.

Respectfully submitted,

By



Steven E. Hellman

Counsel for
Express Pipeline Inc.

October 17, 1995

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141

RIM OPERATING, INC.
8 INVERNESS DRIVE EAST
ENGLEWOOD, COLORADO 80112
(303) 799-9828
(303) 799-4259 FAX

October 16, 1995

Mr. Don Ogaard
Project Manager
Bureau of Land Management
Worland District Office
Post Office Box 119
Worland, Wyoming 82401

Dear Mr. Ogaard:

I have reviewed the information in the draft environmental impact statement. In defining the issues of need for this pipeline and its affect on our operations as a Wyoming Producer. As an active operator of more than 200 wells in Campbell County, Wyoming, I vehemently oppose this pipeline. The three primary issues that need to be addressed and answered are as follows:

1. How will this pipeline affect my operations and future?
2. As a consumer, will the refineries have sufficient feedstock to meet their needs without the Express Pipeline for the next 10 years?
3. What environmental and economic impact will this pipeline have on the local, municipal and state governments?

By bringing in Canadian oil, it will ultimately reduce my product prices. At current prices we are able to keep operating, and in fact, RIM Operating, Inc. is returning a number of wells to production with an active redevelopment plan, AEC overstates the historical decline rate to the extent this will result in a 100,000 BPD difference by year 2004, based on actual historical declines.

In addition, existing pipelines combined with the expansion of the Cenex line, the Amoco/Conoco project and the Wascana-Texaco-Butte line could add up to 120,000 BPD of Canadian crude to the Rocky Mountain market at a cost significantly less than the cost proposed for the Express Pipeline project. Even with the decline in Rocky Mountain production as projected, sufficient crude will be available for the next ten years through existing pipeline systems and/or systems that can be expanded or built at significantly less cost to supply the local refineries with their feedstock necessary to meet the production demands of the area.

Response to Comment # 141, Rim:

Please see rewritten Appendix N and the response to letter 16, comment a.

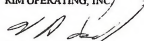
Mr. Don Ogaard
Page Two
October 16, 1995

Refinery closures, if they should occur, will not be for a lack of feedstock from existing sources but due to the increased cost associated with the Clean Air Act combined with the small capacity of most refineries that lack the economy of scale. In addition, product lines are being built to supply refined products to the major markets of Denver, Colorado Springs and Salt Lake City. Retraction of refined products from export pipelines in the region will put more pressure on many refineries in the Salt Lake City and Denver areas resulting in lower demand for outside crude via new pipelines like the Express project. The EIS report does not adequately address the socioeconomic affect a large capacity crude oil pipeline will have on the Rocky Mountain and Mid-Continent states. An additional 170,000 BPD of crude oil will definitely have an adverse affect on the price of crude in these areas. When the supply exceeds the demand, the price will decline. The tax base in Wyoming and Montana is very dependent on the revenue received from oil and gas. Any project that reduces the price of oil at the wellhead definitely will have the same affect on the economy in the entire state and region. Adequate supplies of crude oil can be made available for the refining sector through current pipeline systems during this period of time. The economics do not support this project.

The Express Pipeline is not warranted by this study and will not be needed for at least ten years, if at all. Once again, we oppose this pipeline and wish to send this message to the Bureau of Land Management to vote for Alternative 1 - the No Action Alternative.

Very truly yours,

RIM OPERATING, INC.



V. A. Isaacs, Jr.
Chief Executive Officer

VAI/cc

FRONTIER OIL CORPORATION
and Subsidiaries

GERALD B. FAUDEL
Vice President, Safety, Environmental
and External Affairs

5340 S. QUEREC STREET, SUITE 300N
ENGLEWOOD, COLORADO 80111-1011
(303) 714-0100



OCT 17 1995

BUREAU OF LAND MANAGEMENT
1016-1000 2010-10-05

October 12, 1995

Bureau of Land Management
Worland District Office
Attn: Don Ogaard, Project Manager
P.O. Box 119
Worland, WY 82401

Re: Express Crude Oil Pipeline Draft Environmental Impact Statement

Dear Mr. Ogaard:

Frontier Oil Corporation, a small, independent oil refiner and marketer of refined products with corporate headquarters in Denver, Colorado and a refinery in Cheyenne, Wyoming strongly recommends that BLM approve the right-of-way proposed in the Express Crude Oil Pipeline Draft Environmental Impact Statement through the adoption of either Alternative 2 or Alternative 3, as presented. While Frontier agrees generally with the descriptions of the socio-economic considerations of this proposed project as presented in the Draft EIS, we believe that the negative impacts on local communities that would result as a consequence of the closure of refineries due to the inadequate crude oil supplies if this project is not authorized should also be addressed. Although these comments focus primarily on the socio-economic impacts associated with the project, other practical considerations, including the increased environmental and safety risks involved with the shipment of volatile petroleum products such as gasoline rather than the more stable crude oils to be carried by this proposed pipeline are also very important. Frontier has no preference regarding the two route variation alternatives presented in the Draft EIS.

Introduction:

Frontier Oil Corporation's manufacturing facility is an oil refinery located in the southeastern Wyoming city of Cheyenne. Frontier's Cheyenne refinery was originally constructed in the mid-

Response to Comment # 142, Frontier:

Please see rewritten Appendix N. Thank you for the data you supplied.

1930's as a small topping plant for the production of railroad fuels. The refinery was greatly expanded during WWII to provide the country with additional capacity to manufacture aviation fuels needed for the war effort. After the war, the refinery continued to operate under the private sector ownership of the original Frontier Oil Corporation and later Husky Oil. In 1986, the refinery became the major asset of a new company, operating under the resurrected name and logo of Frontier. Most recently, Frontier Oil Corporation was purchased by Wainoco Oil Corporation of Houston, an oil exploration and production company that has invested heavily in modernization, upgrade and expansion of the facility. The refinery has now grown into an efficient and complex facility with a crude capacity of 41,000 barrels-per-day.

Frontier is a major employer in the Cheyenne region with annual sales of \$350 million and a full-time work force of approximately 260 people earning and spending a total of \$16 million in wages and benefits. The refinery is also a purchaser of Wyoming crude oils, currently averaging 18,000 barrels-per-day of Wyoming General Sour and approximately 10,000 barrels-per-day of predominantly locally produced sweeter crudes and condensates. In addition, a number of local businesses and contractors make their living by supplying goods and services to the Cheyenne refinery. The sales, property and use taxes paid by Frontier also contribute substantially to the area's financial security.

Over the years, Frontier's Cheyenne refinery has been extensively modified at substantial cost to enable utilization of a greater quantity and a higher percentage of sour crudes. Most recently, Frontier, through its parent corporation Wainoco, has committed approximately \$60 million to upgrade the refinery to allow manufacture of the low sulfur diesel fuel (as required by the Clean Air Act Amendments of 1990) from Wyoming General Sour crude oil.

Frontier is in general agreement with the estimates of declining regional crude oil production presented in the Express Pipeline Draft EIS. We recently have experienced the impacts of that decline and, as a consequence, have suffered dramatic negative effects on our profitability which could, if sustained, threaten Frontier's continued viability.

During the last year, there have been many times when Wyoming General Sour has been in such short supply that Frontier has been forced to seek other sources of crude oil to keep up with our contracted demand for refined products. Often, comparable economic substitutes have also not been

obtainable and we have consequently had to either curtail our throughput or process other, less desirable crude oils resulting in reduced profitability. As recently as mid-1993 Frontier processed up to 28,000 barrels-per-day of Wyoming General Sour. Today that volume is down to 18,000 barrels-per-day even though Wyoming General Sour is the preferred crude for Frontier's refinery and even though Frontier has increased significantly the price it pays for Wyoming General Sour. This shortage of appropriate, available crude oils has been a key factor in the anticipated dramatic decrease in Frontier's operating income from 1994's \$23 million (when such feedstocks were more readily available) to a projected \$2 to \$3 million in 1995.

At the same time that crude oil availability is decreasing, the demand for finished products in the Rocky Mountain region is increasing, subjecting Frontier and other area refiners to competitive pressures from refiners outside the region. Although the Express Crude Oil Pipeline Draft EIS suggests a constant demand for finished products in the foreseeable future, Frontier has estimated an annual increase in demand of approximately 1.7% (or about 7000 barrels per day per year) in the near future.

The Regional Industry:

It is widely accepted that regional crude oil production is decreasing and that demand for finished petroleum products is either stable or increasing. Since, in either case, the demand for finished products cannot be satisfied by steady or increased regional production, the region must face either the import additional crude oil needed by the area refineries to manufacture the additional product or the import of finished products via pipeline or truck from refineries in the Northwest or the Gulf Coast. While either of these two options will satisfy the public's demand for gasoline and diesel, only the import of crude oil will ensure the continued health of the region's refining industry and, by doing so, sustain local economies and local markets for regionally produced crude oils. Further, it has been demonstrated over the last two years that the crude oil from Canada cannot compete with locally produced crude oils, but rather will only be used by regional refiners to supplement that local production when supplies are not sufficient to meet refinery demands. The following table presents recent comparative pricing structures for Canadian Bow River sour crude oil and Wyoming General Sour at Guernsey.

Pricing - Heavy Sour S/Bbl

		Posting	Gravity Deduct	Bonus	Tariff	Price @ Guernsey	Delta
May '95	Wy. Sour	\$14.44	(\$1.96)	\$4.25		\$16.73	
May '95	Bow River	\$16.90			\$1.72	\$18.62	\$1.89
June '95	Wy. Sour	\$13.24	(\$1.96)	\$4.25		\$15.53	
June '95	Bow River	\$15.49			\$1.72	\$17.21	\$1.68
July '95	Wy. Sour	\$12.04	(\$1.96)	\$4.50		\$14.58	
July '95	Bow River	\$14.47			\$1.72	\$16.19	\$1.61
Aug. '95	Wy. Sour	\$12.74	(\$1.96)	\$4.50		\$15.28	
Aug. '95	Bow River	\$15.09			\$1.72	\$16.81	\$1.53

Note that the price of the Canadian sour crude is consistently higher, and therefore less economically desirable to the local refiner, than the comparable Wyoming sour. This price differential is due, in large part, to the additional transportation cost necessary to import the Canadian crude. Locally produced crude oils will continue to enjoy this cost advantage even as imports increase, as long as there is a healthy local refining market for the locally produced crude oils. However, if the local market is weakened by refinery closures, locally produced crude oils will have to be transported to other markets and also incur incremental transportation costs thus becoming less competitive.

Frontier therefore believes that the Express Crude Oil Pipeline or a similar project designed to reliably transport needed incremental crude oil to the refiners in the region benefits not only the entire oil industry, producers and refiners alike, but, by keeping the whole industry healthy, also preserves the state and local economies in the areas served by the pipeline.

Economic Effects of Refinery Closures:

PADD IV is an expansive, relatively sparsely populated region of the country that has been traditionally served by small, often independently owned oil refineries. Since the early 1980's many of the smaller refineries in the United States have been forced to close, due to the economic pressures of increased competition from larger, more efficient facilities, the major oil company shifts of investment focus to foreign countries, the declining availability of domestic crude oil and the ever-increasing environmental burdens associated with doing business in the U.S. Often, these closures have resulted in devastating economic impacts on the small communities in which they operated. In Wyoming, only four of its original eight oil refineries are still operating. All of the remaining oil refineries in Wyoming are small (<50,000 B/D capacity) and independent (must rely on purchased crude oil.) All of the major oil companies have abandoned their refining operations in the State. The cities of Cody and Casper have experienced the loss of population and a decline in the standard of living and economic vitality; in large part, as a result of the closure of their local oil refineries.

In 1992, in response to a proposed EPA regulatory program, a group of small refiners commissioned Solomon Associates, a nationally recognized petroleum consultant, to prepare a report describing the unique contributions and pressures characteristic of small refiners in the U.S. The Executive Summary from that report is included with this submittal. The report accurately describes the remaining Wyoming refiners and estimates the consequences of the closure of such facilities on local economies. As stated in the Draft EIS, regional refinery closures may be expected unless refiners can access reliable supplies of crude oils to supplement the declining local production. Obviously, from the viewpoint of an independent refiner, the most reliable source of supplemental crude oil would be that provided by an independent producer and/or an independent pipeline operator, such as that offered by the Express Crude Oil Pipeline project.

Summary:

a Frontier believes that the regional oil industry and the regional economy would be best served by BLM authorization of the Express Crude Oil Pipeline right-of-way. If approved and constructed, the project would result in the reliable import of crude oil in sufficient quantity to supplement the declining local production and keep the refineries running at capacity. This would, in turn, act to sustain the economic strength of local communities and provide local markets for locally produced crude oils. If the right-of-way is denied, Frontier believes that Wyoming and the region may risk the following: 1.) closure of additional oil refineries, 2.) refined product consumer cost increases, 3.) adverse economic impacts on local and state economies, 4.) reduced demand for locally produced crude oil, and, 5.) increased environmental and human health impacts due to increased highway transport of crude oil or products, or product pipeline accidents.

Some business segments, particularly the independent crude oil producers, have expressed concern that alternative supplies of crude oil will lessen incentives to continue drilling in the Rocky Mountains. Frontier emphatically disagrees with this assumption. Regionally produced crude oils will always remain the preferred feedstocks due to significantly lower transportation costs. Frontier does not believe that the Express Crude Oil Pipeline will reduce the price of local crude oils but will only allow Canadian crudes to become an alternative as local crude oil volumes continue to drop.

We believe there should be a proper balance between the rights of producers and refiners. Indeed, Frontier's continued viability depends in large part to the continued economic strengths of local crude oil producers and to the continued local crude oil production. It does not serve Frontier's interest to damage the incentives for local crude oil production. Hopefully it does not serve the interest of local producers to damage Frontier and other regional refiners by restricting crude oil availability.

Thank you for consideration of these comments. Please call if you have any questions or need additional information on which to base your decision.

Sincerely,



a. The impacts to Wyoming and the Rocky Mountain region listed in this comment might also occur if the Express right-of-way is granted. Please see MDQ Response to Comment # 12, parts 1 and 2, and MDQ Response to Comment # 143, part 4.

SOLOMON ASSOCIATES EXECUTIVE SUMMARY

Much of the petroleum refining industry's management attention and time has been spent on the ramifications of the Clean Air Act of 1990 and similar environmental legislation over the last few years. Quite often government regulatory initiatives are based upon a review of only a limited number of larger facilities within the industry. Many small refiners have voiced a concern that the public data utilized in discussions with the government agencies do not properly represent the position of the average refiner, especially the small refiner, in the United States. The implication is that either (1) the smallest refineries can easily meet demands designed for large-scale facilities or (2) the small refineries are inefficient and unlikely to survive in any case. This study has been organized to test these theses.

How does the government define the concept of the "small refinery?" Section 410 (h) of the Clean Air Amendments defines a Small Refinery as a refinery or portion of a refinery which has bona fide crude oil throughput of less than 50,000 barrels per day as reported to the Department of Energy and which, as of the date of enactment of the Clean Air Act Amendments of 1990, is owned or controlled by a refiner with a total combined bona fide crude oil throughput of less than 135,000 barrels per day as reported to the Department of Energy. The Federal Register dated March 23, 1993 further interpreted the Clean Air Act Amendments small refiner as a fuel refinery and owner that meet the above figures based upon information supplied to the Department of Energy for calendar years 1988 through 1990. Fifteen of these plants have participated in this study so the results could be utilized by each plant or group of refineries to better guide both federal and local authorities on legislative and regulatory issues appropriate to the refining business.

We provided detailed presentations in each area of this report which discuss the actual operations by competitive refineries in the United States for operating year 1992. These results have been presented in several formats which will enable each subscriber to objectively contrast his own performance level with those recorded by the rest of the industry. In addition, we visited each participant to better understand the data collected and to inquire about further detail on financial performance, logistics and local community issues.

Many of the surviving small refineries as of this report are located in remote regions or smaller metropolitan areas of the United States. A majority of these plants supply petroleum products to widely-dispersed niche markets after processing locally-produced crudes. Some of these markets are not served by any other source. Some of these crudes are not processed by any other refiner. These market and raw material limitations exert external forces on the small refiners which cause them to be small, less energy efficient and process higher priced raw materials. From the results of the study we find that this segment of small refiners are viable entities when compared under the same conditions as the overall industry. The small refiner indeed has unique characteristics which should be considered by regulatory agencies. They cope with these limitations very well and still remain economically viable and are valuable contributors to their local

economy. After all, many of them have succeeded in areas where major companies have withdrawn. This study highlights are as follows:

- More than 120 petroleum refineries have been retired from service in the United States since 1980. Of these, 91 could be classified as small refineries.
- The average downstream processing severity, sometimes known as complexity, for the small refiner is 7.0, compared to an average of 11.5 for the United States industry. The small refiners process primarily a lighter and sweeter domestic crude. This is in contrast to many of the larger refineries which have adapted to lower gravity and higher sulfur foreign crudes.
- Many geographic areas served by the small refiner have not enjoyed the same economic growth as the rest of the United States. Lower demand for products have caused most small refineries to have lower individual process unit utilizations than the overall average United States refining industry.
- By processing better quality feedstocks small refiners have a higher raw material cost per barrel which is somewhat offset by an advantage in cash operating costs.
- Most of the small refiner study participants produce higher yields of road asphalt or asphaltic specialties than the average United States petroleum refinery.
- The average United States refinery manufactures about five times as much chemical and lubricant feedstocks and specialties as the small refiner.
- The small refiner segment report a requirement for about twice the hydrocarbon storage and inventories per unit of sales volume as the industry at large.
- The 1992 profitability of the typical small refiner as measured by dollars per barrel is very similar to that of the rest of the United States refining industry.
- The small refiner reported similar future annual capital expenditures per EDC to the rest of the United States refining industry. Since the future of profitability within petroleum refining may be limited, both the small refiners and the rest of the industry expect to keep total

capital expenditures per EDC for the next five years at the same level as the last four years. However, whatever money is set aside for capital expenditures will be utilized differently. United States refineries of all sizes provided information of their future expectations which suggested that future spending for environmental compliance facilities will double from that of last four years.

- The small plant's energy costs per BTU are lower than the rest of the industry. However, the smaller refiner requires higher levels of energy to operate which resulted in fifty percent higher total energy costs for calendar year 1982.
- Total routine and turnaround maintenance costs per EDC are comparable for the small refiner and the rest of the industry.
- Because of his location in remote, less industrialized areas, the average small refiner incurs lower average salaries, wages & benefits required in the major refining centers. However, the small facilities suffer from an economy of scale issue which require higher manpower per unit of capacity. The result for the small plant is overall personnel costs per unit of product twice as high as the industry average.
- Fifty percent of this study's participants reported major oil companies had withdrawn from their market areas over the last ten years. In addition, most of our subscribers believe that the larger companies are not presently interested in either entering into or returning to the same areas.
- About ninety percent of the small refiners output is delivered to end users within a 200-mile radius of their refinery.
- The recently released report by the National Petroleum Council indicates that the small refiner will spend about twice as much on environmental issues as reported in this small refiners' study. The implication here is either the National Petroleum Council has overestimated the small plant's position or the small refiners have underestimated theirs. Based upon past experience within the industry, our plant visits, and validated information, we suggest that the actual figures may be somewhat higher than the small refiner estimates but much less than those purported by the NPC.

- Recent softness in the raw material and product markets have combined to lessen the average refiner's profitability. Faced with potentially much higher demands for environmental compliance capital and operating expenses, more refineries within the United States will most likely be shutdown. If the fifteen small plants in this study were among those unfortunate businesses, a total of 22,000 jobs could be lost. Many jobs in areas that are already hard hit from other economic problems. Extrapolating the same results to all of the plants classified as small refineries would show a potential loss of over 100,000 jobs to the United States economy.
- Policies which fail to recognize the unique character of the small refiner segment could cause the shutdown of a large portion of this industry segment. In such an instance, we anticipate that local product requirements would be met from distant major refining centers via expansions of pipeline and terminal systems. But, though product supply may continue to be adequate and competitive in price, the economic impact upon communities in which small refineries are presently located would be significant. They would suffer a loss of tax base and local employment opportunities, both for those directly employed in the refineries and for many suppliers and support services.

LOCAL ECONOMY IMPACT

More than 120 refineries have been shut down in the United States since 1980. One scenario and, possibly, the most devastating for our participants and their host communities is to shut down their refineries. What would be the impact on the local and regional economy? Most would agree that it would affect the crude oil and non-crude oil feedstock market and the petroleum products market. However, since many of our participants are significant employers within their small community, their closure would have a major impact on most economic activities within the area.

JOBS IMPACT FROM REFINERY CLOSURE

The first consequence from a refinery's closure is the greatest since it represents the loss of immediate jobs at the plant and the human impact resulting in every family affected. The information below indicates the approximate distance that most employees live from the plant.

REFINERY'S EMPLOYEES RESIDING IN THE AREA

(Accumulative Percentage)

	RSC		EDC	
	I - III	IV - VI	Group A	Group B
Within a Radius of				
10 Miles	70	78	74	80
50 Miles	99	100	100	100

Soon after the plant jobs are lost, other jobs become redundant in the local and regional economies which rely heavily on the refinery for their livelihood. The data on Table VII-1 indicate that, if all of our fifteen participants would cease business activities, the total estimated number of jobs lost to the United States economy would exceed 22,000. The most significant percent of these jobs would be in the states of New Mexico and Wyoming. If you take the same figures and extrapolate them to the eighty refineries now classified as a small refinery, the approximate number of jobs lost to the economy represent over 100,000 positions.

Some former refinery employees would immediately seek another job with similar pay. However, as Table VII-2 indicates, most of the participating refineries pay about fifteen percent higher wages than the average job holder in that state. Most seeking another job with similar pay and benefits would be disappointed. Some would move to an area with better prospects, some would settle for a lower paying position, and others would file for unemployment. Most of these alternatives would have a substantial negative impact on the small local economies.

EFFECT ON LOCAL ECONOMIES

Although many of the refinery's employees and families live in the area, many of the additional reductions in jobs are also from the immediate vicinity. Each refinery purchases many ancillary supplies and services within a short distance of the plant.

REFINERY'S NORMAL OPERATING SUPPLIES

PURCHASED IN THE AREA

(Accumulative Percentage)

	RSC		EDC	
	I - III	IV - VI	Group A	Group B
Within a Radius of				
10 Miles	35	39	48	21
50 Miles	60	61	75	39
In the State	68	89	87	76

A loss of this significant business within these support companies would also magnify the impact of the shutdown. One of the main areas in which many of these support companies are utilized is for normal and turnaround support of the refinery maintenance efforts.

REFINERY'S NORMAL CONTRACT LABOR

SUPPLIED FROM THE AREA

(Accumulative Percentage)

	RSC		EDC	
	I - III	IV - VI	Group A	Group B
Within a Radius of				
10 Miles	36	71	63	38
50 Miles	78	84	81	61
In the State	80	98	96	88

be a medium term effect on product pricing. Product can always be trucked or railroaded from distant sources, either product terminals or other refineries, for a significant additional cost to the consumer. Eventually, if a sufficient pricing differential persisted, product pipelines or other transportation systems would expand to supply the difference.

The largest price fluctuation would probably be for asphalt and all types of asphaltic materials. Most of the small refiners produce some volumes of these materials. The asphalt production capacity in the United States is not being fully utilized presently. A shutdown of some of this capacity should improve the utilization and eventually the efficiency of the remaining plants. However, asphalt and asphaltic materials are very difficult to transport. It would have to be moved to the desired locations by tank truck, rail car or barge where waterways are available. This should definitely increase the asphalt price to the consumer.

We estimate that the price of asphalt could increase by one to four dollars per barrel due to additional transportation costs. Some relevant information could be the present movements of residual and asphaltic materials for similar distances. Transporting various grades of residual fuel by barge down the Mississippi presently costs about four cents per gallon or \$1.68 per barrel. Asphalt would probably cost incrementally more. In Europe, moving residuals by rail from Rotterdam to Germany currently costs about three dollars per barrel. Tank trucks tend to be on the higher end for the same movement at four dollars per barrel. However, over the last few years, increased asphalt demand has not necessarily resulted in price increases or complete transportation costs pass through for asphalt. Conversely, asphalt prices declined in 1992. Under-utilization of facilities and direct competition might prevent the full cost of additional transportation from being passed on to the consumer. The non-local producers might have to settle for a lower price which also might further suggest that they withdraw from the area.

ALTERNATE CRUDE DISPOSITION

Generally, the shutdown of any one of the small refiners would have little effect on the overall crude oil market in the United States. If a small facility ceased processing crude, the oil would have to be transported to another plant or be made available to the spot market or the production shut in. Again, the worse scenario for the local economy would be for discontinued production. In the other scenarios, the producer would generate some revenue for the oil but probably less than now realized from the small refiner. Most likely, a gathering company would be paid at least the differential to guarantee a market for the crude.

If another refiner bought the oil, he might pay the posted price for the oil plus some bonus. However, he would not be willing to pay more than his current

delivered supply price. In either case, the producer would most likely get less for his crude but the gathering company could get some additional income. The net effect to the United States economy should be negligible. However, the locality receiving the cash or transfer payments for the crude and services could vary.

If most or many of the small refiners shut down simultaneously or within a short time frame, the effect on the crude market could be more dramatic. The existing crude pipeline system might not be capable of handling the additional volumes of crude needing alternate dispositions and some crude might be shut in. In addition, releasing half a million barrels of crude onto an already soft market could have a tendency to drive many spot prices down. This situation may occur even though the demand for products would still exist for the remaining refiners. If oil prices remain as low as they have been in the last twelve months, some of this crude in more remote areas might be shut in if the producer experiences too much of a price reduction in offsetting the additional cost of transporting this now homeless crude to a market. If prices return to the twenty-dollar range, this scenario may again reverse itself.

As we discussed earlier in Section III, crude is not the only raw material processed by the average United States and small refiner.

RAW MATERIALS

(As a Percent of Total Input)

	United States		RSC		- EDC Group -	
	Average	BRS	I-III	IV-VI	A	B
Crude and Condensate	88.2	91.4	89.6	92.6	91.2	91.5
Butanes/NGL	2.4	3.0	2.6	3.3	2.6	3.3
Reformer Feedstreams	1.3	0.6	1.1	0.6	0.5	0.9
Cracker Feeds	3.0	1.3	2.8	0.2	0.3	1.9
Reduced Crude/Vacuum Resid	1.2	0.0	0.0	0.0	0.1	0.0
All Other	3.9	3.5	3.9	3.3	5.3	2.6
	100.0	100.0	100.0	100.0	100.0	100.0

The lighter materials would eventually find their way into the spot market since they could more easily be transported by pipeline to large markets. The heavier materials, however, would have a more difficult time finding a home. Again, the handling problems of the cracker feeds and residuals over long distances create a transportation nightmare—often a very high cost of two to four dollars per barrel.

TABLE VII-1
IMPACT OF REFINERY CLOSURES
ON STATE EMPLOYMENT

	Number of Jobs Lost ¹	Total Number of Jobs in State (K) ²	Percent of Total Jobs in State
Arkansas	2,527	1,269	0.20
Indiana	1,027	3,138	0.03
Mississippi	977	1,245	0.08
Montana	821	446	0.18
New Mexico	5,198	780	0.67
Oklahoma	2,913	1,684	0.17
Utah	1,373	959	0.14
Washington	704	2,889	0.02
Wisconsin	588	2,918	0.02
Wyoming	6,601	271	2.44
Total	22,729		

¹ Based on number of refinery jobs lost times U.S. Department of Commerce multiplier.

² Source is U.S. Department of Commerce.

TABLE VII-2
WAGE IMPACT OF REFINING INDUSTRY

	Refinery Wages As Percent of Average State Earnings ¹	Total Wages As Percent of State Earnings ²
Arkansas	112	0.24
Indiana	78	0.20
Mississippi	111	0.09
Montana	126	0.24
New Mexico	134	0.93
Oklahoma	126	0.21
Utah	119	0.21
Washington	96	0.03
Wisconsin	124	0.03
Wyoming	115	3.77
Average	115	

¹ Average 1992 annual wage per person as a percent of average 1989 annual household earnings reported by U.S. Census Bureau.

² Changes in state earnings (calculated using U.S. Department of Commerce multiplier times total refinery wages) as a percent of total state earnings

OCT 17 1995

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BUREAU OF LAND MANAGEMENT

FLYING J, INC.

333 WEST CENTER P. O. BOX 540180 - NORTH SALT LAKE, UTAH 84054-0180
PHONE (801) 298-7733

October 16, 1995

Mr. Don Ogaard
Bureau of Land Management
P.O. Box 119
Worland, Wyoming 82401

Post-it brand fax transmittal memo 7071		# of pages = 5	
TO: Don Ogaard	FROM: FLYING J		
cc: BLM	cc: FLYING J		
Subject:	Subject:		
307-347-6193	801-298-7733		

Dear Mr. Ogaard,

Flying J owns a refinery situated in North Salt Lake, Utah and has been actively involved with trying to find new supply sources for crude oil into our area for the last four years. We fully support the Express project and feel that all of the Salt Lake Refineries depend on this project. All other crude pipelines options only provide a band aid until the Express line is built.

I have read thru the entire EAI Report as well as the summary that was included in the DEIS. Basically EAI's conclusion is that crude production will level out, finished product pipelines will be built into the area and refineries in the Rockies will close.

I would like to address some of the background information EAI uses to draw their conclusions and show the fallacy in the basis for their conclusions. Frankly I won't go over each one but I'll give you enough to make you realize they really didn't do their homework and actually shot from the hip.

First in their full evaluation report dated 28 July 1995 they mention on page E7 that the Utah refineries operated at 95% of capacity when in actuality they are closer to between 80-85% of capacity. They specifically refer to our (Flying J) overhead condenser constraints as to why we can't operate at design capacity. This is pure hog-wash, we can't operate at higher rates because the economics aren't there to do it - period. They also try to rate the refiners level of sophistication and indicate that several of the refineries are not state of the art and can not survive. I say hog-wash

Response to Comment # 143, Flying J:

Please see rewritten Appendix N. Thank you for the data you supplied

a. Mr. Garner (for Flying J) did not give enough details of Flying J's economic constraints to evaluate his assertion that his refinery cannot operate at higher rates because the economics aren't there to do it.

a because given a crude slate similar to what we Salt Lake City refiners currently have, we can compete with anyone. Canadian crude is that similar crude type. One of the plants in Salt Lake City that isn't as sophisticated has carved out a niche market that enables them to be both competitive and profitable.

Secondly in their summary table B-1 showing the refinery runs based on percent volume and crude types run by the different refineries they didn't do their homework.

b Example, in Wyoming they show Frontier Refinery as needing 60% sweet crude where in actuality they can run 100% sour crude (by the way, that plant and our plant have not been referred to as Husky at either location for over 8 years) they show Phillips in Salt Lake City running 16% yellow wax, where as to the best of my knowledge Phillips has never run yellow wax crude. They show only three crude types run in Salt Lake City where as there are actually seven different types run. Several of the other refineries show similar discrepancies within their crude capacities and or crude types run with in the Utah and Wyoming survey as those mentioned above.

c Third, in the executive summary on page B2 of the DEIS they refer to Canada's finite resource (ie crude), inferring that it is in limited supply, when according to the Canadian National Energy Board (NEB) the crude supply in Western Canada will grow from 1.9 Million B/D in 1994 to some 2.1 Million B/D in 1997.

They also refer to the production declines in the Pad IV area as declining at about half the 10 year decline average based on only the last two years. I personally have found the longer term trends to be more indicative of things to come and would further suggest that the future looks bleak based on the rig count numbers for the last twelve months in Wyoming as compared to prior years.

d Fourth, the report is almost totally void of an understanding of the Salt Lake City market for refined products and what competition we are facing. They didn't mention the Reno, Nevada truck market that is infringing on our market place nor the material that is being hauled up from Las Vegas, Nevada via truck, and they seemed unaware of the talks to extend a finished products line from Las Vegas to within 50 miles of Salt Lake City, Utah. This line, I am confident, will be built if Express is not. Eight years ago when Flying J took over the Husky Refinery in North Salt Lake, all the refineries here were running at capacity (including one in Roosevelt Utah that is now shut down) and since then because of local crude declines and limited access to outside crude sources we have been forced as a refining community to operate at only 80 to 85 percent of capacity.

e As I mentioned at the on set of this letter this is just the tip of the iceberg as to things that were not fully researched before conclusions were drawn. I am willing to personally address the BLM in regards to my concerns as to the rest of the evidence presented in this study.

The study to me seems to concern itself too much with the cost of the project

b. The representative crude oil slate for Rocky Mountain refineries is an approximation, and deviations from that estimate do not change the overall conclusions of the report.

c. In the field of natural resource economics, fossil fuels are always considered finite resources. Being a finite resource does not exclude the possibility that the supply of Canadian oil is increasing in the short run, and the report does not dispute that assessment.

d. The report did not specifically mention competition from trucked Nevada petroleum product supplies. However, that fact does not change, but rather supports the report's overall conclusion that Salt Lake City refiners face competition from refiners outside the region.

e. As noted in the introduction to the Economic Analysis of System Alternatives to Express section, due to the competitive nature of the Express Pipeline (Express is not a "utility" under the Montana Major Facility Siting Act) the Montana Board of Environmental Review is not required to establish "need" for the project. The report focussed solely on comparing the cost of the project with the costs of alternatives to the project, should the project not be built.

e rather than the need for the project. Since when is this the driving factor, if the operators are comfortable with the rate of return.

If EAI better understood that crude volumes are just one consideration that a refiner must consider, this study would understand the need for the Express project. We refiners must also concern ourselves with the crude quantities and costs on a delivered basis, none of which are covered in this report. The Express's largest initial market will most likely be Salt Lake City, an area the report least investigated or understood. Without an understanding of the Salt Lake City market I can see why they come to their conclusions, but when Salt Lake City is factored in correctly you reach a different conclusion. Salt Lake City will probably take an initial volume of approximately 30,000 B/D of crude off the Express of a compatible crude type with our operations and at a price because of the economics on the Express pipeline that will enable us to win back the markets that we have lost to the West Coast refiners.

I did strongly agree with one statement the EAI report made and that was, "Refined products will determine the future of Pad IV," i.e., products pipelines or crude pipelines. If its product pipelines then there will be refinery closings, crude pipelines operating at reduced rates, jobs lost, and producers receiving less for their crude as their market place shifts from Gvernsey Wyoming to a freight equalized Cushing Oklahoma market. With crude pipelines the infra-structure stays in place and because of the efficiency of the pipeline we all maintain a healthy industry within the Rocky Mountain area. This pipeline will not access cheap crude that will drive local prices down but rather it will access world cost crude (which by the way is equal to or higher than existing market prices) that will enable us to compete with the surrounding refinery communities on an even footing.

I appreciate you taking the time to read this lengthy letter and I hope that I've helped you better understand what's at stake. Please if you have any questions, don't hesitate to call.

Sincerely,



Rob Garner
Manager Crude and LPG Supply
Big West Oil/Flying J

24-Oct-24

Rockey Mtn. Statistical Summary 1993

[rock1993]

[illegible]

✓ This is the important #s

Reg	112,884,784	11,732,147	12,116,800	1,312,822	36,899,643	78,376,928	8,237,106	261,775,167
Res	120,767,000	51,832,000	36,771,000	1,867,300	32,619,000	66,187,000	7,068,000	268,716,000
Dis	87,667,002	39,817,000	37,926,000	787,000	28,281,000	21,814,000	6,064,000	122,417,000

Bbls. / Day

	Spending	D. Debits	Net - D.D.	Stat	Col. - Ind.	Total
00	111,087	110,827	26,040	64,835	46,249	707,165
01	227,203 - 1,329	179,600 - 1,000	93,839	70,910	108,720	304,880
02	738,110 - 1,278	128,238 - 8,075	57,666	37,666	102,314	312,114
03	123,119 - 0.000	770,177 - 1,770	93,120	95,431	97,000	120,120
04	252,453 - 1,000	119,233 - 1,000	102,003	47,028	56,760	361,186
05	252,453 - 1,000	23,233 - 1,410	12,122	12,122	12,122	702,122
06	272,712 - 1,000	123,000 - 10,128	75,135	131,121	95,561	207,000
07	272,712 - 1,000	127,200 - 1,000	70,010	40,004	55,561	251,556
08	272,712 - 1,000	127,200 - 1,000	70,010	40,004	55,561	251,556
09	272,712 - 1,000	100,600 - 6,000	41,277	23,122	40,773	434,204
10	272,712 - 1,000	100,600 - 6,000	41,277	23,122	40,773	434,204
11	272,712 - 1,000	100,600 - 6,000	41,277	23,122	40,773	434,204
12	272,712 - 1,000	100,600 - 6,000	41,277	23,122	40,773	434,204
13	272,712 - 1,000	100,600 - 6,000	41,277	23,122	40,773	434,204
14	272,712 - 1,000	100,600 - 6,000	41,277	23,122	40,773	434,204
15	272,712 - 1,000	100,600 - 6,000	41,277	23,122	40,773	434,204
16	272,712 - 1,000	100,600 - 6,000	41,277	23,122	40,773	434,204
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37	272,712 - 1,000	100,600 - 6,000	41,277	23,122	40,773	434,204
38	272,712 - 1,000	100,600 - 6,000	41,277	23,122	40,773	434,204
39	272,712 - 1,000	100,600 - 6,000	41,277	23,122	40,773	434,204
40	272,712 - 1,000	100,600 - 6,000	41,277	23,122	40,773	434,204
41	272,712 - 1,000	100,600 - 6,000	41,277	23,122	40,773	434,204
Aug	711,613	110,428	77,722	36,840	59,846	676,212
Nov	227,267	106,256	101,138	101,298	102,000	261,000
Dec	206,167	6,294	11,612	37,174	10,000	104,157
Total	(216,861)	(2,466)	(1,800)	(2,400)	(2,725)	(28,864)

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Express Forecasts

130 West 2nd, Suite 3E, Casper, Wyoming 82601 (307) 577-8000
OCT 18 1995

BUREAU OF LAND MANAGEMENT
OCTOBER 16, 1995

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Dear Mr. Oswald:

There are parallels between Express and the Kern River natural gas pipeline. When Kern River was being pushed, Wyoming's goal was to develop more Wyoming natural gas and transport it to the Southern California market.

From Wyoming's perspective, the focus of Kern River was to do all we could to develop our own natural gas reserves. This, it seems to me, should be principal concern for our oil production in our state.

As you are no doubt aware, Wyoming has had oil production declines in recent years. The Governor, I believe, is committed to stabilizing and improving oil production. This philosophy to a large degree was the reasoning behind his Minerals Conference in April. It recognizes that our state's tax structure depends heavily on mineral production.

Should the Express Pipeline be built, Wyoming oil production could be displaced. A much more practical solution would be for the development incentives and regulations that will increase oil production in Wyoming.

For the reasons stated above the No Action Alternative for the present would best enable Wyoming to carry forth with its renewed efforts to maintain and help its vital oil industry.

Very sincerely,

Bill Schilling
Executive Director

Response to Comment # 144, Heritage Foundation:

Please see rewritten Appendix N. Thank you for the data you supplied

Canadian Express Pipeline

Canadian Express Pipeline . . . this is Bill Schilling for Wyoming Business Today.

Monday last was an important date. Comments were due to the Bureau of Land Management regarding the Canadian Express Pipeline--a proposed Canadian project to bring some 170,000 barrels a day of Canadian crude from Alberta to the Billings, Montana refining market.

Why the significance of the Canadian pipeline? Pause and think about Wyoming's economy and the tax revenues generated from oil production. Since 1994 Wyoming's oil production has dropped by 18,000 per day while Canada's exports to the US have increased by 82,000. Over the past 10 years Canadian exports have grown six-fold. The Billings refinery takes 120,000 barrels per day of Canadian crude--about 80 percent of the refinery's needs. Obviously, it does not take a rocket scientist to figure out that if Canada exports a lot more crude to Billings--which will be the case if the Canadian Express Pipeline is built--there won't be any need for Wyoming crude coming out of the Big Horn Basin and the Powder River Basin.

Back in September there were public hearings conducted by the Bureau of Land Management about the Canadian Express Pipeline. The issue is complicated. There are the interests of Canada and the desire to produce more and export more crude oil to the US. There are American companies that explore and produce in Canada. There are beliefs in some quarters--as articulated in the BLM EIS on the pipeline--that our region is running out of ways to meet present refinery requirements since production in Wyoming and elsewhere in the region is falling off.

But what if production in Wyoming were to stabilize? And even if production was to drop some more in the future, could refineries in the region get their crude oil supplies by way of other sources? Interesting questions--especially when some \$25 million a year in state and local mineral and education revenues are on the line in our state alone.

For the state of Wyoming's pure self interests, everything that can be done must be done to maintain a viable oil industry. That is what Governor Geringer is committed to doing. He is interested in incentives--new technology by way of non-traditional discoveries and production methods. For now it seems only prudent to take this course.

But if the Canadian Express Pipeline is built, and in the process displaces Wyoming crude or takes away profit margins for Wyoming producers, the Governor's goal of stabilizing and maintaining our crude oil industry is unlikely to be achieved. Wyoming in turn will once again will have another cycle of oil production declines.

For all of these reasons, last Monday was an important day for our state and those who produce oil in Wyoming. Let us hope that the Bureau of Land Management will move with great caution and seriously look at the social and economic impacts of the proposed Canadian Express Pipeline on Wyoming's economy.

This is Bill Schilling for the *Wyoming Heritage Society* and *Wyoming Business Today*.

RECEIVED

OCT 18 1995

MRAN

MONTANA • RIVER • ACTION • NETWORK

145

COMMENTS ON
EXPRESS CRUDE OIL PIPELINE
DRAFT ENVIRONMENTAL IMPACT STATEMENT

OCTOBER 16, 1995

Background

On August 8, 1995, the Bureau of Land Management, in cooperation with the State of Montana, Department of Environmental Quality (DEQ) released a draft environmental impact statement (DEIS) on the proposed Express Pipeline Project. This project is a major industrial activity, taking place on both public and private lands, which could have serious consequences for many Montana streams and rivers.

Express Pipeline, Inc. (a subsidiary of a Canadian company) proposes to construct, operate and maintain a 24-inch pipeline from Wild Horse, Alberta (located on the Montana/Canada border) to Casper, Wyoming. Express Pipeline, Ltd. (the Canadian equivalent) proposes to construct, operate and maintain a 24-inch pipeline from Hardisty, Alberta to Wild Horse, with the two pipelines connecting at Wild Horse. Together these pipelines would initially transport 172,000 barrels per day (BPD) of crude oil from the production fields in Alberta, Canada to refineries in Wyoming, Colorado, Utah, Kansas, Oklahoma, Illinois, Indiana, Ohio, Kentucky and Tennessee via the existing pipelines downstream of Casper. With additional pumps, the capacity would ultimately increase to 280,000 BPD.

Before Express Pipeline, Inc. (Express) is allowed to construct this pipeline, it must obtain all necessary permits from federal, state, county and local jurisdictional bodies. Express is also required by law to obtain a Right-of-Way Grant from the Bureau of Land Management (BLM) and the Bureau of Reclamation (BOR). Before these agencies can grant such permits, they must consider the pipeline proposal under the National Environmental Policy Act of 1969 (NEPA).

In addition to the permitting process for federal lands, the Montana Board of Environmental Review must approve the Montana portion of the pipeline project under the Montana Major Facility Siting Act (MFSA) and the Montana Environmental Policy Act (MEPA). MEPA requires state agencies to

assess a project's effects on the quality of the human environment in Montana. Additionally, the Board may only approve an alternative that *minimizes the projects environmental effects when compared to the nature and economics of various alternatives.* The Montana Department of Environmental Quality (MDEQ) is the lead state agency responsible for evaluating compliance with the MFSA and MEPA.

Non-Compliance with Procedural Regulations

1. Montana Environmental Policy Act (MEPA):

The DEIS ignores the responsibility of MDEQ to meet its obligations under MEPA. The DEIS merely states that "because MEPA's requirements are similar to NEPA's, this EIS will also serve to meet MDEQ's obligations under MEPA." (DEIS, 1-8) Simply stating that MEPA requirements are "similar" to NEPA does not grant this proposal or the regulating state agency exemption from applicable law, in this case, MEPA. MEPA addresses environmental concerns not covered by NEPA, which are unique to Montana and its outstanding natural resources. The Express DEIS fails to adequately address major provisions of MEPA at 75 MCA § 75-1-201(1)(b)(A) by failing to provide a detailed statement on the environmental impact statement for a project which significantly affects the quality of the human environment. Concurrently, at MCA § 75-1-201(1)(b)(B) the DEIS fails to address all adverse environmental effects that cannot be avoided if the proposal is implemented.

Furthermore, the Express DEIS is in direct contradiction of The Natural Stream and Land Preservation Act of 1975 (MCA § 75-7-102) in that "it is the policy of the state of Montana that its natural rivers and streams and land and property immediately adjacent to them within the state are to be protected and preserved to be available in their natural or existing state and to prohibit unauthorized projects in so doing to keep soil erosion and sedimentation to a minimum, except as may be necessary and appropriate after due consideration of all factors involved."

2. Montana Major Facilities Siting Act (MFSA):

Concurrently, the Montana Board of Environmental Review must issue a Certificate of Environmental Compatibility and Public Need for that portion of the pipeline that traverses Montana. As we will discuss further, this document fails to adequately address the social and economic needs that justify such a serious threat to the ecological integrity of those lands located along the pipeline corridor. Since this project falls under the category of a major industrial activity proposed to take place on public land, the DEIS must directly address the requirements as cited under MFSA.

Response to Comment # 145, MRAN:

a. and b. DEQ is jointly responsible with the BLM for the preparation and content of the Express EIS and disagree with the broad assertions made in this comment about the adequacy of the document in regard to requirements under applicable Federal or Montana law.

The draft EIS on pages 3-28 and on 4-15 describe the process to be used to determine the proper method for crossing Montana streams and rivers.

Between publication of the draft and final EIS, DEQ, in cooperation with MDFWP and interested conservation district officials, conducted on-site inspections of all perennial streams crossed by the route, intermittent and ephemeral streams with designated floodplains crossed by the route, and intermittent streams with fish species of special concern (Northern redbelly/finescape dace hybrids) present. Results of these additional site specific analysis and considerations of alternative crossing methods are presented in Appendix O.

DEQ believes this site specific analysis more than adequately addresses requirements for a detailed analysis of project impacts and weighing of impacts and costs at stream crossings.

Express Pipeline Inc. is not a "unity" as defined by section 104(13) of the Major Facility Siting Act. Therefore, the State of Montana cannot consider nor make a finding on the economic need for the proposed project (75-20-301(4) MCA). 1. The draft and final EIS will contain the DEQ's analysis of potential impacts and the measures necessary to reduce them consistent with the requirements found in MFSA.

3. National Environmental Policy Act (NEPA):

By referencing NEPA 40 CFR § 1500, the DEIS attempts to "tier" or incorporate by reference their NEPA analysis to previous analyses to "eliminate repetitive discussions" and bypass the usual in-depth analysis required under NEPA.

Because the proposed pipeline roughly follows the same route of two other pipelines for which EIS's were previously prepared, the DEIS seeks to incorporate by reference the PGT/PG&E and Altamont Natural Gas Pipeline Projects Final EIS (Federal Energy Regulatory Commission, 1991) and the Amoco Carbon Dioxide Projects Final EIS (BLM, 1989). This type of activity is specifically addressed at 40 CFR § 1508.28 wherein it states that tiering is "appropriate when the sequence of statement or analyses is (a) from a program plan or policy environmental impact statement to a program, plan or policy statement or analysis of lesser scope or to a site-specific statement or analysis." Clearly, this project is not of lesser scope than either of the cited projects, nor is this a "site-specific" analysis, but rather a broad and vague overview of a major project covering hundred of miles.

NEPA documentation that is older than 3-5 years is outdated. To reference an outdated document by incorporation is irresponsible and scientifically lacking in prudence when NEPA guidelines are applied. The problems experienced in the attempted implementation of these two referenced projects should be sufficient justification for a fully comprehensive and independent NEPA analysis. The previously referenced attempt by the DEIS to bypass NEPA regulations only serves to provide further evidence of the need for updated NEPA documentation. 40 CFR § 1502.15 makes specific reference to this type of obfuscation in addressing the Affected Environment: "Verbose descriptions of the affected environment are themselves no measure of the adequacy of an environmental impact statement."

The DEIS further fails to meet significant requirements of NEPA by failing to address or provide a valid discussion of reclamation, revegetation and rehabilitation plans. Instead, the document makes vague promises to protect environmentally sensitive areas with "additional procedures" and an extensive appendix listing Dominant and Restrictive Soil Map Units. There is little or no discussion of revegetation and rehabilitation procedures. 40 CFR § 1508.25(f) clearly indicates that agencies must consider the "natural or depletable resource requirements and conservation potential of various alternatives and mitigation measures."

Instead, the DEIS attempts to trivialize this lack of documentation by placing blame for poor rehabilitation potential on soil characteristics such as salinity, sodium, steep slopes, unsuitable texture and shallow depth to bedrock ratios. However, the DEIS goes on to state, without documentation, that "most of the pipeline route crosses soils with rehabilitation potential of fair or better." (DEIS, 3-13) This text references a table showing a "Summary of

c. "Tiering" and "Incorporation by Reference" are different procedures, and should not be confused. Incorporation by reference (40 CFR 1502.21) means using available material so as to cut down on the bulk of a NEPA document. The cited passage refers to "tiering" and is not relevant. The Express DEIS does not tier to these previous analyses.

d. NEPA documents have no "expiration date". Most of the data from these previous analyses remains valid. Field surveys were conducted to acquire current data in resource areas which could be affected by the passage of time.

e and f. Reclamation measures listed in the DEIS are general in nature to apply to the variety of land encountered along the 515-mile pipeline. Site-specific reclamation on public lands (19 percent of the route, see Table 19) will be addressed in the Plan of Development, which must be filed and approved before construction begins. In Montana, reclamation of private lands is covered under the Montana facilities Siting Act. The DEQ will establish construction reclamation standards and practices to be applied to all lands in Montana to mitigate impacts to vegetation and water quality. In Wyoming, reclamation on privately owned lands will be negotiated between Express and the individual land owner. On these private lands in Wyoming, the BLM will assist with reclamation procedures if requested.

Rehabilitation Potentials for Soils Crossed by the Express Pipeline Route" (DEIS, Table 7, 3-14), which does not indicate any source or provide any type of supportive documentation. 40 CFR § 1502.14(f) states that "agencies shall include appropriate mitigation measures not already included in the proposed action or alternative."

- f It is improper and a violation of NEPA regulations to assume that mitigation will take place and therefore draw the conclusion that these impacts will be insignificant. Mitigation measures must be clearly outlined and defined before any project of this magnitude can be allowed to proceed. Until such time as Express can present a detailed mitigation plan for the revegetation and rehabilitation of all disturbed areas, this project fails to meet applicable regulations as outlined in NEPA.

Environmental Compatibility and Public Need

This project could prove to be devastating to some of Montana's premier water resources. The pipeline would cross Milk Creek, Sage Creek, the Missouri River, Arrow Creek, Wolf Creek, Cage Creek, Judith Creek, the Mussellsell River, the Yellowstone River and the Clark's Fork of the Yellowstone River in Montana, along with several significant streams and rivers in Wyoming. In Montana alone, the pipeline would cross 28 perennial, 36 intermittent and 18 ephemeral rivers and streams, as well as 313 various named and unnamed drainages, irrigation canals and ditches.

- g The pipeline would cross ten streams or rivers in Montana with designated 100-year floodplains, and another 33 streams or rivers with estimated 100-year floodplains. Calculated scour depths for 100-year flood events on many of these rivers would be more than enough to "disrupt" the underlying pipelines and cause a disaster of unprecedented proportions, despite assurances that "at all perennial rivers and major streams, the pipeline would be buried with a minimum depth of cover of five feet." The estimated depth of bed scour for the Milk River is 22 feet. The estimated life of the pipeline is approximately 25 years. This effectively means there is a one in four chance that the Milk River will scour to 22 feet, disrupt the pipeline and cause a major ecological disaster.

If the Express proposal is adopted, all but one crossing of streams and rivers would be constructed using the "open-cut method" where the trench would be excavated by tracked backhoes moving through the bed of flowing streams. Only at the crossing of the Missouri River would the pipeline would be installed using "directional drilling" techniques instead of trenching and backfilling. The proposed use of the "open-cut method" on other major Montana rivers would be highly disruptive to the both the streambeds and the adjoining riparian/wetland areas. The proposed crossings of the Milk

g. See responses a and b. Many of the comments addressing regarding stream crossings are addressed in the analysis and site-specific treatments in Appendix O. The Milk River is a Class IV fishery, the Clarks Fork is a Class III fishery, and the Yellowstone is a Class II fishery. None of these rivers are protected as "blue ribbon fisheries".

g River, the Yellowstone River and the Clark's Fork of the Yellowstone are of particular concern because of their blue ribbon fisheries and their designations as protected rivers.

With the exception of a relatively small amount of annual ad valorem taxes, the social and economic impacts of the Express proposal are adverse and extremely temporary. Temporary impacts from population increases are estimated to last only one to three months. These would include the hiring of local workers, contractor purchases of material and supplies, and spending of nonlocal workers. Construction impacts also include the temporary and permanent removal of agricultural land and forest land from production. All socioeconomic impacts would be directly generated by construction of the pipeline. In the final analysis, this project would be nothing more than a very short-term boom and bust cycle for a mostly rural economy.

h. Please see changes made to the DEIS on pages 4-15 and 4-16, and pages 4-35 through 4-39, and new information in Appendix O.

Stream and River Crossings

Express proposes to use the open-cut method on all river and stream crossings except for the Missouri River, where directional drilling will be used. The DEIS repeatedly ignores indications that directional drilling should be done on streams and rivers such as the Yellowstone and the Clark's Fork of the Yellowstone, which have known populations of fish species of special concern. Instead of exploring the feasibility of directionally drilling these sensitive water, the DEIS merely references a 1992 letter from the Altamont Gas Transmission Co. which concludes that Altamont would not directionally drill the Yellowstone River because it would be cost prohibitive. This is not sufficient justification for disallowing this technique on a crude oil pipeline, whose failure would have much more significant impacts than that of a natural gas pipeline.

h The concerns of the Montana Department of Fish, Wildlife and Parks with regard to spawning brown trout populations and the effects of project operations such as blasting on other fish species are unduly ignored in the DEIS. Increased sedimentation and turbidity could damage spawning habitat by filling redds in the river bed. If the Cenex, Express and Altamont projects all occurred during key spawning times in consecutive years, three spawning seasons could be significantly impacted. (DEIS, 4-87) In addition, MDFWP has indicated that they would require river and stream crossings to be completed between July 15 and October 1 for the Judith River, Ross Fork, Musselshell River, Valley Creek, Yellowstone River, Rock Creek, The North and South Fork of Bluewater Creek and the Clarks Fork of the Yellowstone River. Given the time constraints placed on this project by stream surveys and drilling schedules, it is unlikely that the project would be able to meet the guidelines set forth by the MDFWP.

The main reason for the reluctance to implement directional drilling on the Yellowstone and other sensitive rivers appears to be financial. Directional drilling is costly and time consuming. According to the DEIS, "costs for directional drilling may be up to ten times higher than conventional trenching and backfilling methods..." (DEIS, 2-40) Ironically, later in the DEIS, it states "The cost for drilling [the Yellowstone River], independently verified, was estimated as \$5.8 million compared to \$1.2 million for trenching." The increase in construction time would also likely push the project past projected time frames, however, this would be a small price to pay for a less-disruptive installation. Two and a half months would be more than adequate time to complete directional drilling under the Missouri, Yellowstone and Clarks Fork Rivers.

There seems to be a considerable amount of concern over the use of directional drilling on streams which exhibit unconsolidated soils or large, cobbled conditions. MRAN believes such concerns are unfounded. These streambed conditions are the very reason why rivers such as the Yellowstone harbor large populations of salmonids. If the directional drilling was done correctly and at adequate depth, the more friable rock structures could be avoided, drastically reducing the risk of avulsion. Once again, the only apparent reason for an aversion to the use of directional drilling at these sites would be an increase in cost and construction time.

Operation Impacts on Surface Waters, Wetlands and Forests

The major potential impact from this proposed project would occur as the result of oil spills. By the DEIS's own admission, "Based on historical liquids pipeline safety and performance records, one spill of over 50 barrels of crude oil may occur in the lifetime of the Express Pipeline. *This impact would be significant.*" (DEIS, 4-17; emphasis added)

Projecting distributions to the expected spill rate for the 515-mile Express Pipeline over a 25- and 50-year lifetime, the following predictions can be made: (DEIS, 4-77)

- Four spills of 50 barrels or less and two spills of over 50 barrels could occur in the first 25 years of the pipeline.
- Nine spills of 50 barrels or less and two spills of over 50 barrels could occur during the second 25-year period of the pipeline.

An oil spill in or near any major river or stream would have a significant impact on water quality which would be unacceptable at any level. If a spill occurred during a period of high flow, which is the most likely scenario due to the high scour potential, the contamination could spread over great

i. Please see additional information (pages 2-24, 4-78, and 4-79 in the Summary of Changes, Chapter 2) on the methods that Express would employ to help reduce the probability of an oil spill. The pipeline would be buried below scour depths as indicated in Appendix O. Causes of pipeline failure are described on page 4-16 of the DEIS. Please note that over half of all liquid pipeline failures are caused by human error. The probability of a pipeline being damaged by human intervention in a riverbed is lower than the possibility of human intervention occurring on land. The severity of impact would be based on site-specific factors that cannot be predicted in advance (see page 4-38 of the DEIS).

i distances. There would also be significant indirect impacts to tourism, fishing-related businesses and other recreational service provider, not to mention the general public at large.

According to the DEIS, construction of the project would cross approximately 30.2 acres of wetland and 15.6 acres of riparian vegetation in Montana. (DEIS, 4-24) This is the equivalent of 17,144 linear feet or 17,294 linear feet of Total Jurisdictional Waters of the U.S., depending on if you reference the figures presented in Table 16, DEIS 3-54, or those in Appendix D. Of the wetlands encountered along the route, 89.5 percent would be deciduous shrub or saline/sodic wet meadows. The largest areas of saline sodic wet meadows that would be disturbed are 8.2 acres in the Flat Creek floodplain. According to the DEIS, "impact on riparian vegetation would be long term." (DEIS, 4-24)

j Construction of the project would also require the removal of riparian shrub and forest vegetation. In Montana, the most extensive areas of riparian forest removed would occur at the most sensitive sites: 4.5 acres at the Yellowstone River and 1.9 acres at the Clarks Fork of the Yellowstone. As stated in the DEIS, the primary impact on wetlands as a result of the construction and operation of the pipeline would be the temporary and potential long-term alteration of wetland vegetation. (DEIS, 4-24) Contrary to statements made in the DEIS, additional impacts would include temporary and permanent changes to wetland hydrology, water quality, aesthetic values, and the quality of wildlife habitat.

The effect of cleared rights-of-way on non-riparian forest lands would have the same effect as roads, i.e., habitat fragmentation, easier access for both legitimate and non-legitimate hunters and poachers, and easier access to the interior forest for cowbirds and other edge species that can prey on or drive out native interior species. The period of time between construction and obliteration of these access roads would not be short enough to prevent a significant impact.

Fisheries

Potential impact on fish habitat and populations ranges from physical or chemical changes in water quality to degradation and loss of physical habitat. (DEIS, 4-33) Impacts were judged to be significant based on the following criteria:

- k
- Direct mortality
 - Long-term loss of existing habitat

j. Revised estimates of the amount of wetlands crossed in Montana are provided in the Summary of Changes, Chapter 2. The revised acreage for Wyoming is being calculated for inclusion in the Express Nationwide 404 Permit to be submitted to the Corps of Engineers.

Figure 10 is a generalized vegetation map that may be misleading because of the scale. As shown on Maps 1-7 in Appendix J, there is almost no non-riparian forest crossed by the pipeline in Montana. The only occurrence is a small area crossed north of the Yellowstone River at approximately Milepost 245.

k. The measures listed in Appendix O were designed to lessen impacts on fish habitat. Water quality and fish habitat could be severely affected in the event of a spill reaching a stream.

- Temporary or short-term loss of habitat that may result in increased mortality or lowered reproductive success
- Avoidance by fish of biologically important habitat for substantial periods of time, which may increase mortality or lower reproductive success.

Increased sedimentation and turbidity from construction would have the greatest potential to adversely affect fishery resources. Other impacts on fishery resources, such as disturbance during spawning periods, acoustic shock, loss of stream cover, introduction of water pollutants, or entrainment of fish, will likely result from construction activities. *MRAN believes federal, state and local land management agencies should require the applicants to follow more stringent procedures and to prepare intensive, site-specific stream and river-crossing plans. Any activity that has the potential to violate existing state or federal water permitting standards should not be allowed.*

As outlined in the DEIS, the risks posed to the fisheries impacted by this project are simply unacceptable.

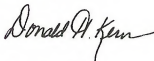
Conclusion

This DEIS is in violation of the National Environmental Policy Act, the Montana Environmental Policy Act, the Montana Major Facilities Siting Act and The Natural Stream and Land Preservation Act of 1975.

After reviewing the DEIS for the Express Pipeline Project, we can draw no other conclusion other than to recommend that the U.S. Department of Interior, Bureau of Land Management and Montana Department of Environmental Quality prohibit the construction of a 24-inch pipeline between Wild Horse, Alberta and Casper, Wyoming. Only in this manner will the devastating physical and biological impacts of this project be prevented. We strongly urge the lead and cooperating agencies to select Alternative 1, or the No Action Alternative.

Please enter these comments into the official record and apprise us of any further developments or documentation in this matter.

Respectfully submitted,



Donald H. Kern
Program Director

RECEIVED

146

8 1995 Maurice W. Brown

BUREAU OF LAND

October 16, 1995

Don Ogaard
Project Manager
BLM Worland District Office
P.O. Box 119
Worland, Wyoming 82401

Re: Express Pipeline Crude Oil Pipeline Project
Environmental Impact Statement

Dear Mr. Ogaard:

We are a small independent exploration company operating primarily in the Powder River Basin in Northeastern Wyoming. We currently are operating or own significant working interests in several Minnelusa Fields in the Powder River Basin. The Minnelusa production is classified as a sour crude and therefore is penalized \$3.50 per barrel in comparison to Wyoming Sweet Crude, in addition most of the Minnelusa crude is low gravity and is penalized another \$1 to \$3 per barrel.

Sour crude prices have risen in the past nine months to be just slightly less than the Wyoming Sweet Crude postings. The U.S.G.S. recently rated the Powder River Basin as the basin containing the fourth highest undiscovered recoverable oil reserves in the conterminous United States. These facts coupled with advances in technology is making the Powder River Basin the focus of a considerable number of independents. With activity levels and the success of new technology the estimate of future production may be underestimated in the EIS. If the markets continue as they now exist and technology increases the success rate as it has in other plays there will be an increase in all forms of exploration including drilling and discovering new fields.

There is currently a considerable amount of activity and success exploring for oil in the Lodgepole formation in North Dakota. This success in the Lodgepole play is a result of the application of 3-D seismic. Two to three years ago this Lodgepole production would not have been predicted. 3-D seismic programs are in the infant stages in Wyoming and there will be production discovered in a few years that cannot be predicted by today's activity levels.

Another dramatic drop in crude oil prices in the region could stifle the exploration businesses. Introduction of the Express Pipeline and the highly subsidized Canadian crude oils into the Rocky Mountain region could cause another dramatic drop in prices. Enclosed is a copy of a Casper Star Tribune article describing the results of imported Canadian gas on the Wyoming gas market. We need to understand that history can repeat itself and if crude oil prices drop as the gas prices have dropped the exploration business could cease to exist. In addition revenues to the State of Wyoming will dramatically drop at a time when the State can least afford another reduction in revenues.

Response to Comment # 146. Brown

a. Please see rewritten Appendix N. Thank you for the data you supplied.

Oil & Gas Division Office
P.O. Box 2961
Casper, Wyoming 82402

300 S. Walcott, Suite 310
Casper, Wyoming 82401

(307) 235-9911
(307) 634-8605
Fax (307) 237-2006

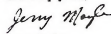
There are currently several pipeline projects being completed in the region that alone could negatively affect the Wyoming crude oil markets. The Conax pipeline will increase Canadian heavy crude imports into Billings, displacing Big Horn Basin crude volumes that currently move north into Billings. This pipeline could affect Big Horn crude oil prices and be an indication of the future impact of the Express Pipeline on Wyoming's crude oil markets.

b. Please see response to comment 18 b.

- a. It is imperative to the State of Wyoming and the oil exploration business in the Rocky Mountain Region that the economic impact of the Express Pipeline to current crude oil markets be completely and accurately assessed. There are several proposed pipelines throughout the area that should be able to handle the reduction in production. It makes sense to evaluate the progress of these pipelines before allowing a major pipeline from Canada to flood the market with large volumes of Canadian crude oil. We request that the BLM carefully review the economics to the Regional Crude markets and protect current production, the exploration business and the Wyoming tax base from the highly subsidized Canadian crude oil.
- b.

Thank you for the opportunity to express our concerns. Please keep us updated on the progress of the EIS and the BLM's position concerning the Express Pipeline. If there are attempts to bring the parties together please let me know as we would want to attend such a meeting.

Sincerely yours,


Jerry Moyle
Land Manager



CRYSEN REFINING, INC.
A CRYSEN CORPORATION COMPANY
October 16, 1995



147

Mr Don Ogaard
Bureau of Land Management
P.O. Box 119
World, Wyoming 82401

Dear Mr. Ogaard,

We are writing this letter to express our support for the Express Pipeline project, and to provide for you the perspective of the refining community here in Salt Lake City. We believe the assertions submitted by those in opposition to this project are not based on informed facts. As Refiners in Salt Lake City, we are in desperate need of a project like this, any delays could be a disaster for the refining community, and the independent producers in the Rocky Mountains.

The refineries in the Salt Lake Area are built to refine high gravity, low sulfur crude oil. Most of this oil is gathered in the Southwest Wyoming area. These supplies are supplemented with similar streams of crude oil available from other parts of Wyoming and the Rocky Mountains. For the past several years these types of crude oils have been in a steady decline. There have been no new significant discoveries of light sweet crude in the area for several years. Refiners are attempting to stay alive in a competitive business with dwindling supplies.

In the mean time competition from the west and other regions have targeted this area for competitive expansion because they have a complete knowledge of the supply situation. They realize that the population is growing and that those of us who supply petroleum products in this area cannot buy crude supplies at a competitive price or in the quantities that are needed. They are proposing product pipelines into this region. If these pipelines are constructed the refineries in this area will close. That would leave producers in this Rockies without an outlet for their crude oil. The result would make producers in this area shippers at their expense. The economic impact on the Rocky Mountain area would be dramatic.

Some of the producers have mistaken the production of asphaltic crude oils in Wyoming as an alternative for Salt Lake refiners. Our hardware in this valley was never constructed to process heavy crude oils with high sulfur content. Their assertions that pipelines have enough local crude oil to provide supply are mistaken for this reason. The only alternative for refiners to operate is light sweet crude oil. The only viable location for that type of crude oil is Canada. The only reasonable transportation rate being offered to refiners is the Express Pipeline.

We believe that if the Express Pipeline is not completed as a project many of the Salt Lake Refineries will shutdown. This will raise product prices in the area to consumers. It will have a negative effect on the prices local producers will receive. It will dramatically reduce revenue to the communities, and the states in the way of taxes, royalties, and not commerce. We would encourage decisions that are made based on realities. We support Express Pipeline.

Sincerely,

Mark E. McSwain
Director of Crude Supply
Crysen Refining Inc.

Response to Comment # 147. Crysen Refining Inc.

Please see rewritten Appendix N

a. Since this comment was written, two competing pipeline routes have filed lower joint tariffs, which would reduce the cost of transporting Canadian crude to Rocky Mountain refineries. Even if Express' proposed tariffs should still be lower than those, its proposed tariffs might not recover enough revenue to yield an economically viable project. If throughput volumes turn out to be lower than Express' original projections, the pipeline's actual tariffs might be higher than its proposed tariffs (see also MDEQ Response to Comment # 12, part 2).

JULANDER ENERGY COMPANY

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OCT 19 1995

BUREAU OF LAND MANAGEMENT
U.S. DEPARTMENT OF THE INTERIOR

Energy, Natural Resources, the Environment

148

VIA TELEFAX (307) 347-6195

October 17, 1995

Mr. Don Ogaard
Project Manager
BLM Worland District Office
P.O. Box 119
Worland, WY 82401

Re: Express Pipeline

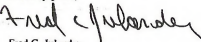
Dear Mr. Ogaard:

Julander Energy Company is an independent natural gas and crude oil producer with a significant acreage position in southwestern Wyoming and northwestern Colorado. We pride ourselves on striving to be a low-cost producer in order to prosper in a competitive, free market environment.

In reviewing the proposed Express Pipeline, we have determined that the rush to predict a continued decline of Wyoming crude oil is too hasty. Based on our recent experiences and those of other producers in the region, we believe that new technologies, such as horizontal drilling, 3D seismic, and new logging techniques, will enable Wyoming and Montana producers to reverse the trend of declining crude oil reserves and production within the next five years. If the Express Pipeline is built, we believe the states of Wyoming and Montana will be on the losing end of the project because the resulting low prices will inhibit producers from experimenting with, and implementing, these new technologies.

As you are well aware, the decline in crude oil production has a negative impact on the state and local tax revenues of Wyoming and Montana. As an independent producer, we urge you to oppose the approval of the Express Pipeline based upon predictions of continually declining oil production. The region is poised for significant production activity. The Express Pipeline would jeopardize that opportunity. I would be pleased to discuss my thoughts in greater detail with you or your staff. I can be reached at (303) 860-7510. Thank you for your time and consideration of my request.

Sincerely yours,



Fred C. Julander
President

Response to Comment # 148 Julander Energy Company

Please see rewritten Appendix N.



149

630 Denver Club Building • 518 17th Street • Denver, Colorado 80202-4167 • 303/623-0967 • FAX: 303/693-0709

IPAMS
Independent
Petroleum
Association
of
Mountain
States

October 17, 1995

Don Ogeard
Project Manager
BLM Worland District Office
P.O. Box 118
Worland WY 82401

Dear Mr. Worland:

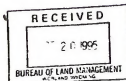
IPAMS inadvertently included the wrong exhibits attached to the letter sent yesterday, October 16 via fax and Federal Express. Attached here are the correct exhibits. A hard copy will follow via USPS. Please forgive any inconvenience.

Sincerely,


Philip Capra

Response to Comment # 149, IPAMS

Thank you for the updated information.



October 17, 1995

Mr. Don Ogaard
Bureau of Land Management
P. O. Box 119
Worland, Wyoming 82401

Dear Mr. Ogaard:

Chevron would like to express its support for the Express Pipeline project to transport crude oil from Hardisty, Alberta to Casper, Wyoming. We would encourage you to approve the public lands right-of-way grant required for construction and completion of this project.

Chevron operates a refinery in Salt Lake City and produces crude oil and natural gas throughout the PADD IV area. Through our subsidiary, Chevron Pipeline Company, we transport both crude oil and products to serve the Salt Lake City refineries. With this significant presence, Chevron is committed to providing the public with affordable product to supply their needs.

With the projected growth of the area, the refineries in the PADD IV region will require the availability of crude oil in increasing quantities and qualities to meet the product demand. Chevron also agrees with the U.S. Department of Energy's published data which shows the region's local supply of crude declining. This decline coupled with product demand growth is forcing the refining community to look outside the region for needed crude supply.

It is our view, that the Express project will provide an option to supply the crude in sufficient quantities and qualities to supply the area's needs. We, therefore, support the effort of Express and request that the application for right-of-way be approved.

Should you have any questions, please contact Mr. D. R. Lee at (801) 539-7519.

Sincerely,



Chevron

Chevron U.S.A. Products Co.
P. O. Box 25117
Salt Lake City, UT 84125

Larry R. Shank
Refinery Manager
Phone (801) 539-7212
Fax (801) 539-7130

150

Response to Comment # 150. Chevron USA Products Co

Please see rewritten Appendix N.

Dear Mr. Compton:

I am writing to request a copy of the full and unabridged environmental impact statement for the Express Crude Oil Pipeline Project.

I have been informed by Express that my land will be crossed by them.

I have a question. Will the state and BLM only be concerned about public lands when ~~you~~ deciding as whether to grant a right of way, etc, or will they also be concerned about protecting the rights and interests of private land to be crossed? Also, will this Express company have the right to condemn land if they can't reach an agreement with the land owner?

Thankyou in advance.

Response to Comment # 151. Murray

As indicated in Chapter 1 of the DEIS (page 1-8 and Table 1), the Bureau of Land Management authorizations would be limited to BLM (and BOR) lands only. In Montana, under the Major Facility Siting Act, the Montana BER certification process would address all affected Montana lands. The State of Wyoming would regulate only those project actions requiring permits from the state (see Table 1 of DEIS).

In Montana, once it is approved as a common carrier pipeline, Express Pipeline, Inc. would have the right of eminent domain/condemnation (see DEIS p. 4-48 and response to Response to Comment # 4/14 for details). While BER approval of the pipeline will address pipeline construction impacts regardless of land ownership, individual easement agreements with individual private landowners and compensation for pipeline impacts would still be required.

David Richerson

Sept. 14, 1995

Dear Art Compton:

Please send me the complete draft EIS on a proposed pipeline that would carry Canadian crude oil to Casper, Wyoming. If possible could I receive ~~the~~ copies please. NO

Also please add name to mailing list to receive future documents on this project.

Sincerely,
David Richerson

Response to Comment # 152, D. Richerson

You should have received a copy of the Draft EIS in response to your request. Your name will also be added to the list for receiving the final document.

RECEIVED 153
OCT - 3 1995

DNRC

Response to Comment # 153. L&S Williams

Thanks for your comments on the project.

153-
Montana Dept. of Environmental Quality
Attn: Air Compliance
Box 202301
Helena, MT 59620

Comments on environmental impact
statement on Pipeline Company Co.

First of all, we appreciate the idea of
an pipeline is that "after thought"
it should be even be discussed at
the time. Since work has
already begun on the pipeline

by the State Water Quality Division
the Dept. of Transportation would
promise, I would say that they
are tried to do a job & have done
it. I agree it is not the government
that gets the companies to work
together.

It is not taxpayers & native Montanans
support employment opportunities & care
for any environmental problems that
the pipeline would cause. We should be that.

Larry L. Williams

Montana Department
of
Fish, Wildlife & Parks

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OCT - 4 1995

M.R.C.



1420 E 6th Ave
PO Box 200701
Helena MT 59620-0701
September 20, 1995

Montana Department of Environmental Quality
Attention: Mr. Art Compton
P.O. Box 202301
Helena, MT 59620

Dear Art:

I am writing to provide comments on the Express Crude Oil Pipeline Draft Environmental Impact Statement (DEIS) in particular and pipeline crossings of live streams in general.

I found the description of the methods to be used for crossing streams in the DEIS somewhat confusing. The description of stream crossings on page 2-37 indicates that with the exception of the Missouri River crossing, all crossings will be wet trench. However, in Appendix B it is stated that for 'minor' streams a dry trench technique will be used utilizing either a flume or a dam and pump approach.

We are supportive of the dry trench technique not only for 'minor' streams, but for larger streams and rivers as well. In fact, we would like to see a policy decision made that dry trench, boring or directional drilling will be used at all river and stream crossings unless it is demonstrated that these techniques are not technically feasible. For example, it is not technically feasible to directionally drill the Yellowstone and we have agreed to the use of the wet trench technique.

This does not seem to be an unreasonable approach given the inherent value of our rivers and streams. The DEIS indicates that the preferred approach to crossing irrigation canals as well as primary and secondary roads is boring or drilling. The same methods should be utilized for stream and river crossings unless it can be demonstrated that these techniques are not technically feasible.

Sincerely,

Chris Hunter
Special Project Bureau Chief
Fisheries Division

C: L. Peterman
S. Leathe
J. Darling

Response to Comment # 154, MDFWP

In Appendix B, page B 58 of the draft EIS, it is stated *"For crossings of all coldwater fisheries, and warmwater fisheries considered significant by the state fish management agency, the stream would be routed across the trench using flume pipe, and the pipeline installed using 'dry-ditch' techniques..."*

During on-site inspections conducted with MDFWP field biologists, streams with significant fisheries were identified and the "dry-ditch" method was recommended (see new Appendix O for additional discussion). "Dry-ditch" techniques are probably not suitable for larger streams and rivers because of increased instream activity and sedimentation impacts associated with placing the temporary dams above and below the crossing.

Your recommendation regarding the use of horizontal boring and directional drill methods is noted. As noted in the new Stream Crossing Techniques section, Express' preliminary findings indicate that directional drilling is feasible at the Yellowstone, Clarks Fork of the Yellowstone, Rock Creek, Judith River, Arrow Creek, and Milk River. However, at all crossings but the Milk River and Arrow Creek the cost difference is considerable.

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OCT - 5 1995

- N R C

Dear Sir

I am opposed to Express proposed pipeline starting from the point at which it enters into section 23 T2S-R22E in Stillwater county, Montana because if there would be a rain or run off, that got into the pipe trench, it could cause washing a hole in existing irrigation ditch known as the Cove ditch.

this would cause flooding into Vally Creek, with a chance of changing its current course, depriving me of my water supply for my current ranching operation.

I am also opposed to the pipeline crossing of my irrigated land for the following reason the possibility of irrigation water following the trench, due to burrowing of rodents or seeping from practice causing damage to neighboring properties or impeding current irrigation practice by not being able to get water to cross over the pipe trench. thus causing the expense of repairing the problem.

Response to Comment # 155, Hicks

The crossing of the irrigation canal in question is in the NE 1/4 of section 25 rather than section 23. This canal crossing would be horizontally bored rather than open trenched so the canal itself would not be disturbed. In addition on sloping hillsides Express would install ditch breakers that would intercept flow down the trench and direct this flow to the surface. Once on the surface water would be directed off the right of way. These measures are taken to preserve the integrity of the pipeline and would also protect the irrigation canal.

As you indicate, the pipeline routing proposed in DEIS Alternative 2 would cross the Cove irrigation ditch at a site that would prohibit the use of horizontal boring (DEIS pg. 2-51 to 2-53). Therefore, if this route were to be used, the ditch would be trenched giving rise to the problems listed. To provide a location away from this steep hillside, where there is room for horizontal boring, the Central Montana routing alternative was developed (DEIS Figure 7A). While it is standard practice to put in ditch breakers and other measures to prevent excessive erosion, the Alternative 2 ditch location crossing would require construction on a very steep site with possible impacts.

Express' understanding of their proposal (see Comment 140 p. 4) was that the South-Central alignment crossing the Cove ditch using a horizontal bore was their proposed route, and that their route would differ from the Altamont route in this location (see Figure 7A for locations). The agencies agree that horizontal boring of the Cove ditch is environmentally advantageous. This horizontal bore location (the South-Central alignment) would be part of any approved agency action.

for these reasons I would like
to see Express people consider their
South Central Mountain alternatives.

Gary Hedger



10/10/95

1995 156

County of Stillwater State of Montana

BOARD OF COUNTY COMMISSIONERS
P.O. Box 970
Columbus, Montana 59019

Art Compton, Project Manager
Montana Department of Environmental Quality
P.O. Box 202301
Helena, MT 59620

October 6, 1995

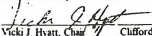
RE: Express Crude Oil Pipeline - Draft Environmental Impact Statement

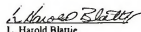
Art Compton:

Thank you for providing copies of the Express Crude Oil Pipeline, Draft Environmental Impact Statement for our review. Please include the following comments in the final statement. Chapter 4, Page 4-58 indicates there would be heavy vehicles on county roads and 400 trips per day of worker traffic. There is no mention in chapter 4 of mitigation of damage to county roads beginning on page 4-81. Again on page B-69 in section 11.1 traffic management there is no mitigation for impacts in county roads.

In our opinion, the Draft Environmental Impact Statement for the Express Crude Oil Pipeline project does not adequately identify impacts to county roads, analyze alternatives in relation to impacts to county roads and does not provide for mitigation of impacts to county roads. We request the Final Environmental Impact Statement for the Express Crude Oil Pipeline project include the required analysis and provide mitigative measures for impacts to county roads. It is also an unacceptable impact to interrupt traffic on Stillwater County roads. Traffic must be maintained at all times for emergency vehicles and area residents during construction of the Express Crude Oil Pipeline.

Sincerely,
Board of County Commissioners


Vicki J. Hyatt, Chair Clifford A. Bare


L. Harold Blatnie

Response to Comment # 156. Stillwater County Commission

As you indicate, the DEIS provides a general overview of potential damages to rural roadways (DEIS p. 4-58 "Heavy Vehicles on Rural Roadways"). This section concludes that "Short term damage to the rural roads, such as rutting, may result, especially during wet weather. These impacts would last until the roads would be regraded." The mitigation listed on DEIS page 4-81 did NOT include any mitigation for road impacts or traffic interruptions.

There would be impacts to rural county roadways under Alternatives 2 and 3, which will be mitigated through the following measures which DEQ will recommend for the BER to adopt as part of project approval, for incorporation into the project's final Plan of Development. The mitigation for roads impacted by pipeline project activities are intended to return the gravelled roadbeds and their surfaces to the condition existing before project activities. These measures include:

- In order to prevent rutting and excessive damage, construction will not take place during periods of high soil moisture when construction vehicles will cause severe rutting requiring extensive reclamation.
- Construction operations shall not take place over or upon the right-of-way of any railroad, public road, public trail, or other property until negotiations and/or necessary approvals have been completed with the managing agency. Any such road or trail damaged by this project shall be promptly restored as nearly as possible to its original condition.
- Construction shall be conducted so as to prevent any damage to existing real property, including railroads, ditches, irrigation canals, and public roads crossed. If such property is damaged by project operations, the OWNER shall repair such damage immediately to a reasonably satisfactory condition in consultation with the property owner.
- As part of the negotiations for use of public property (see section 2.5.1 above), the OWNER will assess local project traffic impacts on public roads, and will provide a means to: restore gravelled public roads damaged by project traffic to their prior road condition, return public road surfaces to their prior condition before winter freeze-up, and, assure that preexisting road drainage structures, bridges, and berms are returned to their pre-project level of functioning.
- At least 30 days before any construction within or over any county, state or federal highway right-of-way, the owner will notify the appropriate county and DOT field office to review the proposed occupancy, and to resolve any problems.
- In areas where construction creates a hazard, traffic will be controlled according to the applicable DOT regulations.
- Traffic disruptions, delays or blockages will be restricted on primary access routes, as determined by the county, DOT or the managing agency. These agencies will be responsible for identification of locations where road disruptions will require the OWNER to provide on-site detours.

RECEIVED

OK RANCH

MOLT, MONTANA



OCT 31 1995

N R C

*This is a home where the cattle roam,
Where the deer and the antelope play.
Where seldom is heard a discouraging word,
And where the sun shines nearly every day.*

October 5, 1995

Montana Department of Environmental Quality
ATTN: Art Compton
PO BOX 202301
Helena, MT 59620

RE: Express Pipeline Project
Public Comment deadline October 16, 1995

Dear Sirs:

For us there are two problems:

1. If any leakage occurs how does it get cured? Promises seem to mean little. Large bonds are necessary.
2. When the line is abandoned what is done to keep it from collapsing and causing a trench or carrying contamination? Is filling it with sand sufficient or will the pipe rust and contaminate underground water?

We would want these protections provided for in all easements.

Sincerely,

Eddie B. Leuthold
President

Response to Comment # 157, OK Ranch

Under various Montana and Federal laws, Express would be liable for the damages caused by a pipeline leak. DEQ will recommend that the Board condition approval of the project on the completion and approval of a detailed spill prevention, containment and control plan, the outline of which is included as Appendix P. DEQ would be responsible for ensuring that the plan was complied with. Individual landowners also may wish to discuss specific concerns with Express during easement negotiation, particularly those unique to localized concerns that may not be well covered in the overall plan. DEQ has considered the use of bonds for the project and will recommend the use of construction and reclamation bonds. DEQ is not convinced that operational bonds would provide any additional guarantees for performance in the event of a spill than existing laws and is not recommending them to the Board.

The pipeline will have a useful economic life of thirty years and could be safely operational for many more. Problems due to pipeline abandonment are likely to occur in the distant future. The size of a depression caused by rusting and subsequent pipeline collapse would depend on land use practices, soil erosion rates, and the rate at which collapse occurs. Pipeline rusting and collapse is expected to be a slow process. The impact from pipeline collapse would be of most concern in those areas where flood or gated-pipe irrigation systems are used. The concern would be loss of irrigation water flowing down the pipeline route interrupting irrigation systems. In areas of cultivation, where much of the Express route is located, slow collapse of the pipeline may not be discernable due to yearly farming practices.

Standard practice is to thoroughly clean the pipe, remove above ground components and place plugs such as concrete along the length of pipeline or in selected areas to minimize the potential for problems. Because the possibility of abandonment is far out in the future, DEQ has recommended that project approval be conditioned on the development and approval of a plan for abandonment prior to decommissioning that takes into account any operational experience gained over the life of the project. Continued operation of the cathodic protection system after the pipeline has been abandoned would reduce the chance that rusting of the pipeline would occur.

10-15-95

Dear Board Members,
 A couple of weeks ago I
 spent time with a group of married
 and interesting people who came
 to review the route for the pro-
 posed pipeline which will run
 through our property.
 I agree with them that the
 intermittent proposal would
 be the least damaging to the
 wetlands as it would go through
 the narrowest section.
 I agree that it needs to go
 through there at all but
 there is one large box Elder
 tree on the upstream side of the
 proposed route which should
 want to be protected at any cost.
 It was a favorite climbing tree for
 my children and now for my
 grandchildren.

I appreciate the consider-
 ation given to my preferences
 in this matter.

Sincerely,
 Kathleen Hicks

Response to Comment # 158, Hicks

During the on site inspection of Rock Creek Mrs. Hicks identified her concerns. A second alternative was looked at which would cross the creek further downstream. This alternative is further discussed in Appendix O.

Terry Weber
Carbon County Weed District Supervisor

10/14/05

1. Prespraying on how before construction
at least two weeks before
1 month before spurge in Russian Knapweed

2. Blumenthal Ch Area
3,000 acres of spurge
wash vehicles leaving area

3. Submit weed plan - 5 year plan

Supervisors Support Committee
Montana Weed Association

701-912-3967

Box 255

Helena MT 59601

4. Terry Van Duren Yellowstone County Ch
Box 30523
Billings MT 59107

Response to Comment # 159, Carbon County

DEQ agrees with your comments. Before the pipeline is constructed, weed infested areas should be identified in the field and mapped. The infested areas should then be presprayed at least two weeks before the onset of initial construction activities in an effort to reduce seed production during the year of construction. For some species like Russian knapweed, this prespraying should occur earlier as you have indicated.

DEQ is aware of several areas along the pipeline route where leafy spurge infestations would be crossed. These areas are shown in Table 8 of the EIS. Other areas with leafy spurge are certain to be identified during a preconstruction weed survey.

DEQ concurs with the comment that all construction vehicles should be thoroughly washed each time they leave weed infested areas. Washing would reduce but not eliminate the chances of transporting weed seed up or down the right of way.

Complete revegetation of disturbed areas would provide a plant cover that would compete with weeds. DEQ recommends that the Board require Express to attain a noxious weed free vegetative density 30 percent of that on adjacent land one complete growing season after construction and after five growing seasons that vegetative density be 90 percent of that on adjacent land not disturbed by construction. This measure is essentially the same as that required of transmission lines project sponsors under MESA.

A follow-up program of monitoring and weed control should be implemented by Express upon completion of construction. The weed monitoring plan might better extend longer than the five years you propose as the seeds of some species are viable for seven years.

Under Montana law local weed control districts are responsible for weed control and management plans for such projects. DEQ has encouraged Express to develop, in consultation with the affected weed districts, a single comprehensive weed control and management plan for the project.

Montana Department
of Transportation

2010 Highway 101
PO Box 202301
Helena, MT 59620-0301

Montana Department
of Transportation

October 16, 1995

Montana Department of Environmental Quality
Attention: Art Compton
PO Box 202301
Helena, Montana 59620

Subject: Express Pipeline - Draft Environmental Impact Statement (DEIS)

We appreciate the opportunity to comment and attend the inter-agency meeting on the Express Pipeline DEIS. We have the following comments and concerns regarding this project.

1. Page 5-10 "Safety" - In the first sentence there is a reference to Part 195. Many readers will not know what Part 195 is. If it is part of the Code of Federal Regulations, the full citation should be given.
2. Page 1-13 "Table 1" - The second listing under "Agency" in this table is "Montana Department of Highways". This should be changed to "Montana Department of Transportation".
3. Page 2-41 "Crossings of Highways, Railroads and Utilities" - For paved road crossings all equipment, trenches and bore pits must not come within 30' of the paved shoulder. A traffic control plan must be submitted and approved by the respective MDT District prior to any work conducted on highway right-of-way. All boring pits must be protected when left unattended. The pipe construction must have the capability to withstand highway loading, present and future. Interstate crossings must be bored from fence to fence unless otherwise approved by the respective MDT District.
4. Page 3-86 "Transportation" - The first paragraph of this section states that "Highways 212 and 310 are of particular concern because they are two of the primary recreational travel routes to Yellowstone and Grand Teton National Parks." It is our understanding the concern has to do with visual sensitivity rather than the actual highway crossing. If so, we suggest the reference to this concern be omitted from the "Transportation" section and addressed only under the "Visual Resource" section as it leads to confusion regarding the highway crossings.
5. Page 3-86 "Transportation" - The first paragraph should include a statement similar to, "The pipeline applicant would need to obtain Encroachment Permits from the respective MDT District for each of the highway crossings and comply with all attached conditions."

Also, this paragraph references the seven route maps which illustrate the crossings of major transportation facilities. Not all highway crossings illustrated in these maps are listed in the first paragraph on page 3-36.

Response to Comment # 160, Montana DOT

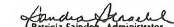
As you indicate, Express pipeline would need to work with district DOT offices in crossing affected state and federal highways (DEIS p. 4-59). Because these highway crossings would be bored (not trenched), there would be reduced transportation impacts. The Montana Major Facility Siting Act provides the forum for assessing these impacts and serves as the single overall permitting authority for transportation impacts. The BER authorization (if provided) would be the comprehensive project authorization, providing a overall environmental review for more localized project activities. Consultation with DOT's District Offices would provide more detailed refinements of project impacts and mitigation. Under MFSA, these consultations are sufficient to authorize project implementation. Following these consultations, the Montana DOT District offices would not need to issue Encroachment permits to Express.

Specifically, some of the Secondary road crossings have been left out (see Attachment A). Although MDT does not exercise authority to approve or reject permits on any portion of Secondary routes maintained by the counties, federal aid and state monies have been invested into the development of these routes, and the MDT is charged with protecting this investment. Consequently, we request these routes be identified and advise that the same standards required for crossing Primary routes should be applied to these Secondary crossings.

We would also recommend including approximate milepost locations of the highway crossings on the route maps so we can check them against our future construction plan.

6. Page 4-34 "Impacts Common to All Action Alternatives" - Even though the four pipelines will not be built simultaneously the DEIS should discuss cumulative impacts to other resources than just visual.
7. Page 4-58 "Heavy Vehicles on Rural Roadways" - Permits should be acquired from the MDT Motor Carrier Services Division (406-444-6130) if heavy vehicles exceed legal dimensions and/or weight while traveling a state roadway.

If you have any questions regarding these comments, please contact Lynn Zanto at 406-444-6303.


Patricia Saindon, Administrator
for Transportation Planning Division
Attachments

c.c. Karl Helvik, Environmental Services
Lyle Manley, Legal Services
Bob Fischer, Utility Section
Gene Stettler, Great Falls District
Bruce Barrett, Billings District
Sandy Straehl, Transportation Planning Division

550 North 31st Street, Suite 500 **161**
P. O. Box 7168
Billings, Montana 59103-7168
(406)245-6748
FAX (406)245-9106

NANCE PETROLEUM CORPORATION

Robert L. Nance, President

October 30, 1995

Mr. Art Compton, Project Manager
Montana Department of Environmental Quality
P. O. Box 202301
Helena, MT 59620

Re: Express Crude Oil Pipeline

Dear Mr. Compton:

This letter is in regard to the Express Crude Oil Pipeline which has been proposed to be build from Wild Horse, Alberta, through Montana, ending at Casper, Wyoming.

Nance Petroleum Corporation is a Billings based, independent oil and gas producer. A great deal of our production comes from the N.E. Montana portion of the Williston Basin. Being where we are in the U.S., Williston Basin crude oil sells for around \$1.60 less than the rest of the country. We struggle with this price differential constantly.

The proposed Express Pipeline would do serious damage to the producers of the Northern Rockies and likewise to the royalty interests of the farmers and ranchers of Montana, not to mention the mineral and tax interests of state, local and federal treasuries.

We believe this line will seriously depress prices in our area, resulting in loss of revenue to the above mentioned constituencies and the potential premature abandonment of numerous wells in our region resulting in job loss.

The Express Pipeline is not needed. There continues to be great potential for oil in our area, contrary to some reports. If the producers in Montana could receive cooperation and price encouragement from state and federal agencies, rather than barriers and discouragement, we could be much more self-sufficient than we are.

I encourage your department to take a very close and critical look at this project and consider the socioeconomic impact -- along with the environmental problems it could have for our State.

Yours very truly,

NANCE PETROLEUM CORPORATION

Robert L. Nance
Robert L. Nance, President

cc: Governor Marc Racicot

Response to Comment # 161, Nance

Please see rewritten Appendix N.

The long-term socioeconomic effects of the Express project on Montana oil production, employment, income and taxes would be noticeable, but would generally be much less than the effects in Wyoming. This is because Montana's oil projection of approximately 45,300 barrels per day is roughly one-fifth of Wyoming's 1994 average production of 220,000 barrels per day. Without direct deliveries to Montana sites, the Express project could cause primarily indirect socioeconomic effects on Montana oil production, exploration, well field operations and refineries. The indirect Montana project effects from a regional \$1.00 per barrel sweet oil price decrease could be roughly one-sixth of the Wyoming scale of impacts. These impacts could include the following at a minimum: an annual loss of approximately \$4 million of Montana producer income, a loss of nine Montana production employees, and a loss of \$0.5 million per year in total state, local, education, and severance taxes. These estimates do not include the substantial regional supply elasticity effects from the high level of Express crude oil deliveries which could create oil surpluses of more than 70,000 barrels per day in the Rocky Mountain region. This surplus could be more than one-third above expected regional demands (see Table N-2).

The following oral comments were made at public meetings held on the DEIS during September 1995.

Havre, Montana, September 11, 1995

Comment 1: The soils along Spring Coulee near the Canadian border are very erosive and the pipeline would be at risk of being exposed. The whole area gets covered with water and there is quite a bit of erosion.

Comment 2: The area that I farm is eroding. Over time the pipeline could be exposed to damage.

Comment 3: A landowner doesn't want land ruined by crude oil and worries about explosion. Would prefer to avoid farmhouses, by going west 1 mile to a section line. Would put pipeline away from houses.

Response 1: The agencies recommend that scour depth be calculated on Spring Coulee and the pipeline be buried below calculated scour depth with an allowance to account for any head cutting that may occur during the life of the project. In addition a heavy walled pipeline could be used in this area to prevent damage to the line.

Response 2: Express has proposed to bury the pipeline 36 inches below the surface, six inches deeper than required by DOT regulations. If there is a reasonable chance that, because of highly erosive soils, the pipeline would not remain buried at a depth to prevent damage from farm equipment then the pipeline could be buried deeper.

Response 3: See response to comment #4/14

Lewistown, Montana, September 12, 1995

Comment 1: Along Ross Fork Creek you should site the pipeline along the abandoned Milwaukee Railroad right-of-way.

Response 1: In the area in question the Express route is immediately adjacent to the route for the Altamont pipeline. Other nearby linear facilities include U.S. Highway 191 located within about 1/4 mile, buried telephone cables, buried facilities connecting missile silos, and another pipeline. Landowners feel that they are the targets of most linear projects whose routings avoid mountainous terrain by paralleling the Ross Fork Creek valley as they approach Judith Gap. The agencies have considered a routing along the abandoned Milwaukee Railroad but believe the existing route would result in lower overall impacts for the following reasons:

a. The railroad route which parallels Ross Fork Creek would entail 4 additional perennial stream crossings because Ross Fork Creek meanders back and forth across the railroad alternative. Without doing a complete wetlands inventory it is not possible to say precisely how much wetland is crossed on the railroad route but air photos clearly show water standing in old cut off meanders immediately adjacent to the railroad. It is for this reason that the Altamont Route was moved to its present location. The pipeline however could be built in areas with high water tables although with greater short term disturbance to wetlands than proposed. Stream crossings of Dry Creek and Meadow Creek on the existing route would be somewhat smaller than the additional Ross Fork crossings those along the railroad route and would likely involve less disturbance to bury the line below scour depth. The agencies believe short term impacts would be greater to water resources and wetlands along the railroad route than along the proposed route.

b. The former Milwaukee railroad right-of-way has been transferred to the adjacent property owners. There is no existing general purpose right-of-way for new linear facilities on the former rail line. The Montana Power Company (MPC) has secured an electrical transmission right-of-way for the Judith Gap to Glengarry 100-kV line, also known as the Central Montana Project. This line uses portions of the old rail right-of-way for transmission towers only (January, 1996 telephone conversation between Gary McWharter, MPC and Art Compton, DEQ). MPC normally requires a 25 to 30 foot buffer on either side of such lines for placement of grounding wires for the line. The above factors and the narrow width of the row in this location make the former Milwaukee right-of-way unsuitable for a pipeline. Any pipeline would likely need to be placed outside of the area disturbed for the rail line.

c. If the pipeline were placed outside and adjacent to the railroad right-of-way, land use impacts such as a one-year interruption of farming activities, would be similar and short-term for either alignment.

Additional landowner concerns regarding management about timing of row inspections are better addressed through easement negotiation.

The agencies recognize that cumulative impacts for linear facilities, especially those that fragment land uses and make farming more difficult, can be considerable. However, the short-term (one-year) construction impacts along the proposed route are not sufficient to warrant a realignment in this area.

Comment 2: Regarding the noxious weeds, would it be possible to set up a trust fund to combat them on the pipeline area?

Comment 3: Concerns were raised about the water table in the area and the depth of the trench. The pipeline crosses about 2.5 miles of Mr. Turner's property and he believes the pipeline would be under water for most of this distance.

Comment 4: I (Mr. Wichman) am concerned that near the crossing of East Buffalo Creek the route is very near one of my wells, which is not currently used, in an area with an artesian aquifer. He is afraid that the basin would be drained if they should ever need the well in the future. I suggest that the company move the route about 100 yards east (not west because there are buildings there).

Comment 5: I am concerned about how farmers would be able to move their cattle and whether the company would maintain fences to control livestock during construction.

Comment 6: What about the width of the ROW being considered in the EIS? How wide a band has been examined for the Company to use for deviations? If a deviation is needed would the company be able to do that?

Comment 7: Why not pull the pipeline out when it is abandoned like the owners of underground storage tanks are required to do?

Comment 8: I won't be able to use cropland when the pipeline is constructed across it. When are we going to get fair market value? It should be five fold or so. Won't be able to restore the land. And how is fair market value determined?

Comment 9: Regarding County road rehabilitation, who will pay for repair of roads when the project is done? Would the company daily has the workers to and from the job site?

Response 2: A trust fund to control weeds along the Express Pipeline right-of-way could be required by the Board of Environmental Review, but Montana's regulations regarding noxious weeds already require Express to control weeds along its right-of-way.

Response 3: It is not uncommon for pipelines to encounter areas with high water tables. Along the Gulf Coast many pipelines have been built through marshy land. If the trench walls do not slough it is not even necessary to pump water out of the trench during construction. The pipe is weighted if necessary and lowered into the trench and covered.

Response 4: The agencies recommend that the route be moved as requested by the landowner. See the discussion of East Buffalo Creek under "Appendix O" for more information.

Response 5: The construction area is generally fenced to prevent mixing of livestock and construction activities. There would be temporary access points in the fencing and across the pipeline ditch and soil piles to allow ranchers access to their herds or for other purposes. Specific items, such as locations of temporary gates and use of electric fences would require site-specific negotiations.

Response 6: The DEIS shows a construction ROW typically 90 feet wide, with a permanent ROW of 50 feet (Figure 6). This pipeline would generally be located within 50 to 150 feet of that proposed for the Almont pipeline route selected during the NEPA process for that project. Due to localized routing concerns, several realignments were considered and recommended through the EIS process for the Express project that deviate from several hundred to 3,000 feet from that originally proposed. This modified alignment is the one being recommended for the pipeline's location. It is recognized that some flexibility during the construction process to adjust to specific conditions in the field may be needed. To accommodate this the Board generally approves a route width of 500 feet. This width will provide limited ability to adjust the pipeline location to address site-specific concerns or field conditions.

Response 7: There cannot be a realistic comparison between treatment for abandoned underground tanks and associated piping and the proposed pipeline at the end of its useful life sometime in the future. Removal of the pipeline would have impacts associated with ground disturbance similar to that for construction and in most cases the impacts to be avoided by removal would be small. DEQ has recognized that proper procedures and methods will be necessary to prevent impacts following pipeline abandonment and has recommended that Express be required to file a plan prior to abandonment which would be reviewed and approved by the DEQ.

Response 8: See response to Comment #4/14 for fair market value question. See reclamation for restoration of land to cropland uses.

Response 9: See response to Comment #153 (Stillwater County) for county road rehabilitation. The nature of construction with extended sequencing of activities over a 50+ mile spread corridor, and the complexities of construction scheduling preclude hussing of workers.

Billings, Montana September 13, 1995

Comment 1: Immediately below the northwestern most crossing of North Fork Valley Creek (Mike Hollenbeck) depend upon the stream as a source of stock water and appreciate the aesthetics of a flowing stream. The creek may be flowing on the surface of an impermeable layer of rock. If the pipeline is constructed as proposed through this area the trench may breach a confining layer and cause the creek to flow underground depriving me of a source of water.

Comment 2: Who owns the pipeline and are the owners sheltered from liability because they are Canadian firms?

Comment 3: Construction timing would be better in early spring or late fall rather than during irrigation (end of May to October 1).

Comment 4: What is the process if a landowner doesn't want Express to go through their property?

Response 1: As noted in the draft EIS the pipeline route has been moved about 250 feet upstream in this area to better avoid a strip of riparian vegetation lands along the stream. After discussing the matter further with Mr. Hollenbeck it became apparent that a mistake had been made in the draft EIS in that the North Fork of Valley Creek was incorrectly listed in Table 8 (page 3-28) as an intermittent stream. Consequently, an on-site inspection has not yet taken place on either crossing of this stream.

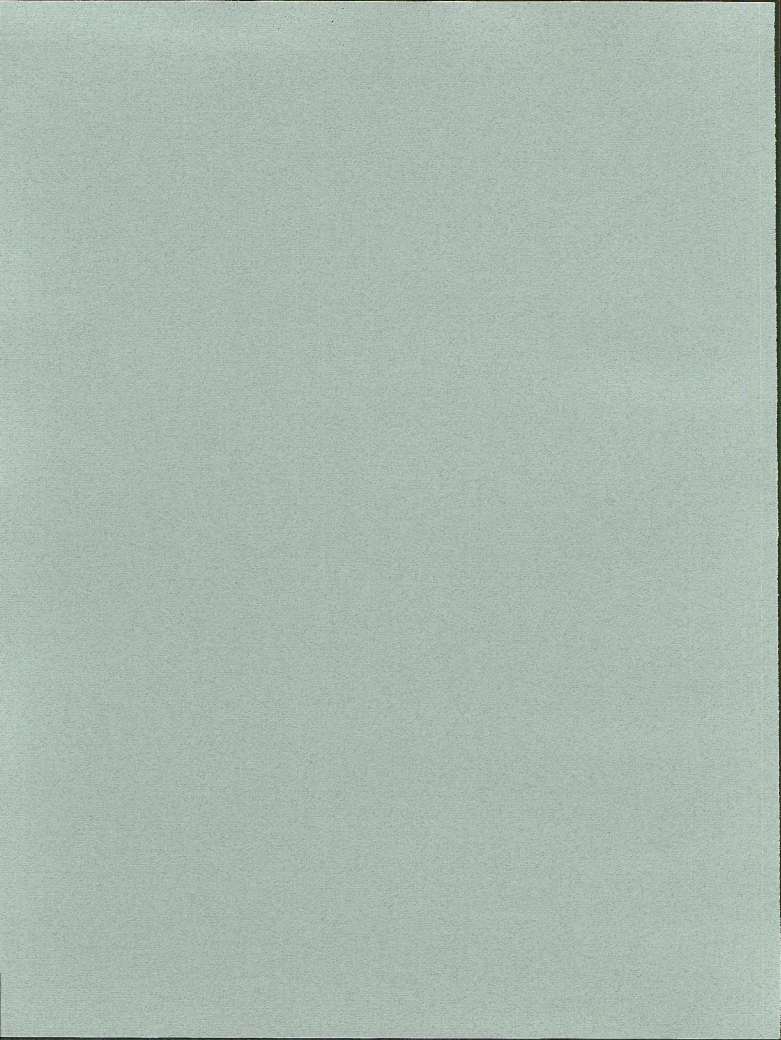
DEQ recommends that prior to construction an on-site inspection take place at each crossing of the North Fork of Valley Creek. Prior to the inspection a limited drilling program, one or two holes would suffice, should be conducted to determine whether a confining layer exists below the stream causing it to flow on the surface in this area. If a confining layer is not present then the project should be allowed to proceed with normal construction methods. However, if a confining layer exists then alternative construction techniques should be considered such as horizontal boring, directional drilling, or lining the trench with bentonite clay. DEQ further recommends that Express calculate scour depth on both crossings of the North Fork of Valley Creek and bury the line below scour depth. Site specific re-vegetation plans would be submitted to DEQ for approval.

Response 2: The Express Pipeline Inc. is a registered U.S. corporation equally owned by Alberta Energy Company Ltd., and TransCanada Pipelines Limited. Ownership of the Express Pipeline Project would not alter the corporations' responsibility to operate in compliance with either the laws of the United States or the states of Montana or Wyoming.

Response 3: The summer growing season (May to October) is also the prime construction season. Construction activities during this time period are easier and generally have lower environmental impact in the long term. As described on page 2-42 of the DEIS, irrigation canals would be bored or trenched, depending on site-specific conditions. Canals that are trenched would generally be trenched during the dry season, so that they could be ready for the irrigation season. Lands used for pipeline construction would be taken out of production for up to one growing season, and affected landowners would be compensated for lost crop production (DEIS p. 4-47 to 4-48).

Response 4: See response to Comment #4/14.

APPENDIX R
PROPOSED POWER LINES FOR THE EXPRESS PUMP STATIONS



Introduction

The project would include construction of three pump stations in Montana and two in Wyoming. The Montana stations would be near Eagle Butte, 10 miles south of Virgelle, near the community of Straw, and the third near Edgar. Each of these stations would require construction of a short electric transmission line. The Wyoming stations would be about five miles southwest of Greybull and about 15 miles east of Thermopolis.

The pump station near Eagle Butte would be connected to a 69-kV line that would tie in to an existing 69-kV line east of the Virgelle substation. The existing line is owned by the Hill County Electric Co-op.

The line to the Eagle Butte will be about 14 miles long with the first 10 miles running along county roads and section lines as shown in Figure R-1. Two locations are being considered for the southernmost 4 miles of this line. The Montana Power Company (MPC) would install four 69-kV breakers at Fort Benton to serve the new line.

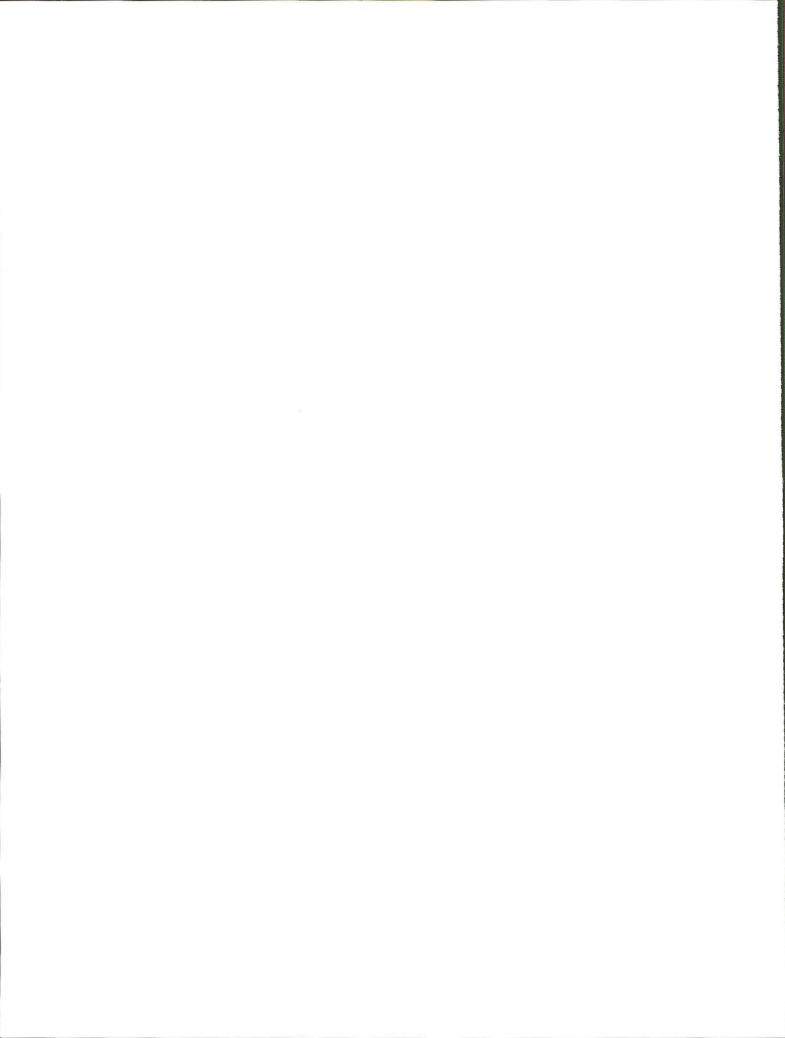
The pump station at Straw would require construction of about a mile of 100-kV line between the station and an MPC 100-kV line that passes by on the west (Figure R-2).

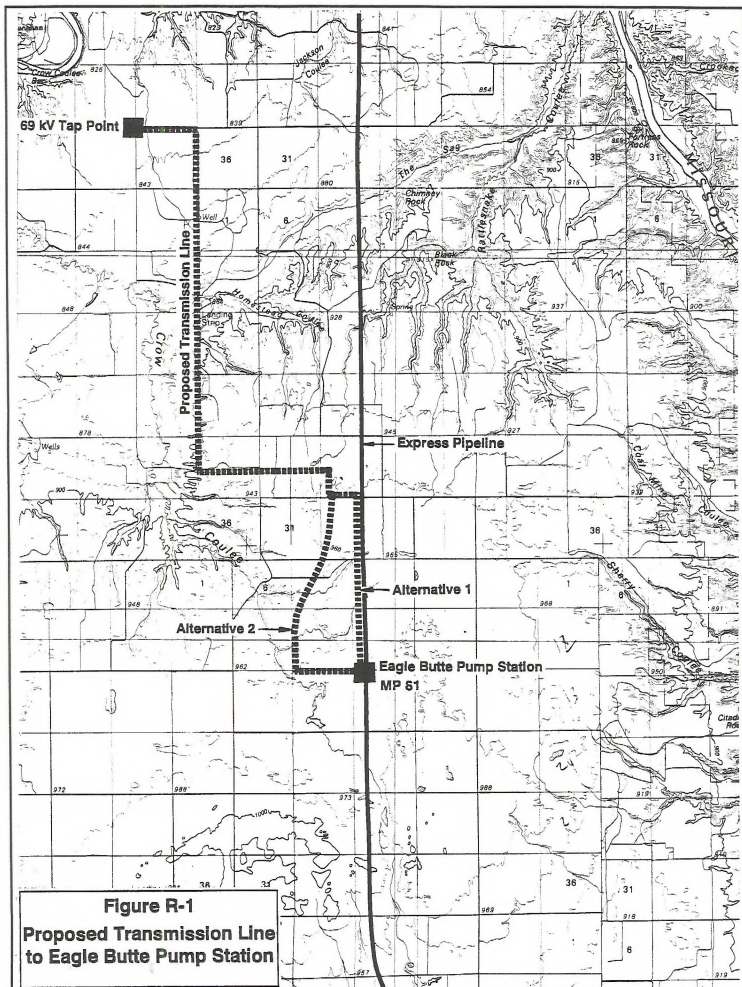
The Edgar pump station would be served by about 2 miles of 100-kV line that would be built between the station and MPC's Laurel to Bridger 100-kV line to the east (Figure R-3).

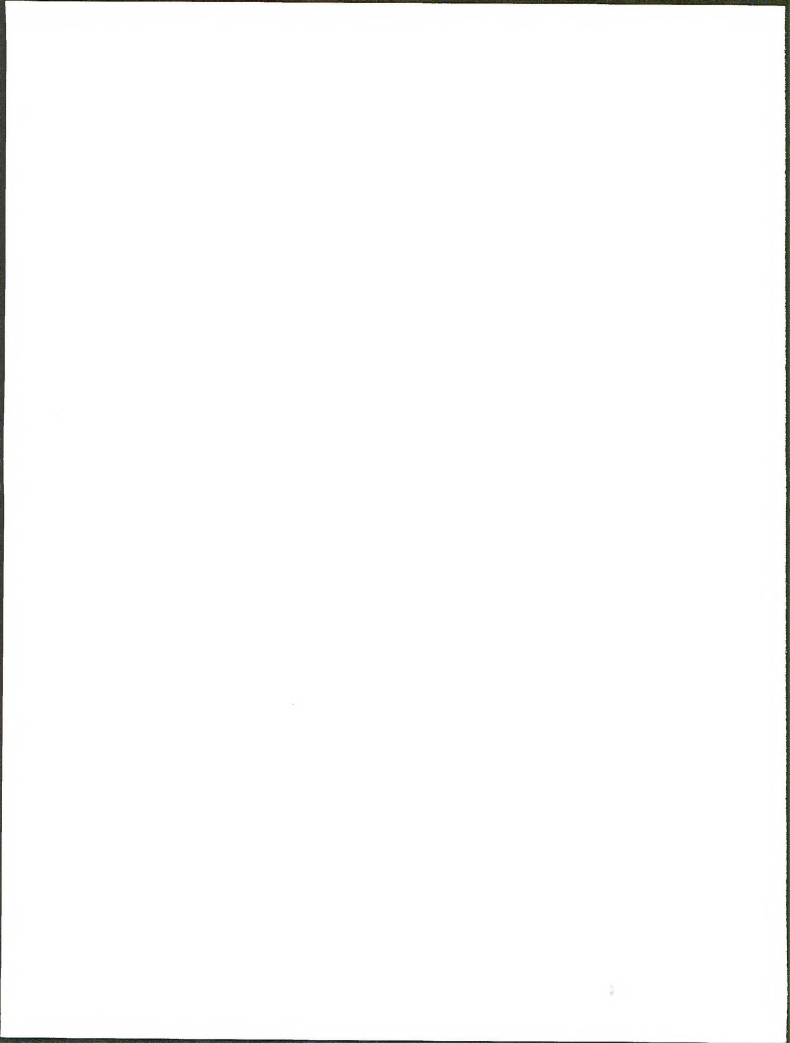
The Greybull pump station would require construction of a two-mile 115-kV line from the Nahne Jennings substation. At this point, the proposed transmission line would tap into the Big Horn Rural Electric 115-kV distribution line (Figure R-4).

Two options are proposed for the Kirby Creek pump station power line. Both options would tie into an existing Pacific Power 115-kV Thermopolis to Worland line with 115-kV taps. One option would tie into the line about six miles north of the Thermopolis substation, while the other option would be to tap the line about 12 miles north of the Thermopolis substation. The transmission line would then parallel Wyoming State Road 172 for about 15 miles, and then turn south for six miles over gently sloping terrain to the Kirby Creek pump station. The second option would connect to the line about three miles west of Kirby, Wyoming, extend east for six miles crossing U.S. Highway 20, turn south for about four miles paralleling an unimproved road, and then join the first option route about two miles east of Lucerne, Wyoming (Figure R-5).

The new transmission lines in Montana are classified under the Montana Major Facility Siting Act as "associated facilities," and as such they must be approved by the Montana Board of Environmental Review before the certificate can be issued. In order to ensure compliance with the Siting Act, DEQ would participate in line siting and development of site specific environmental measures to keep impacts as low as possible at these sites.







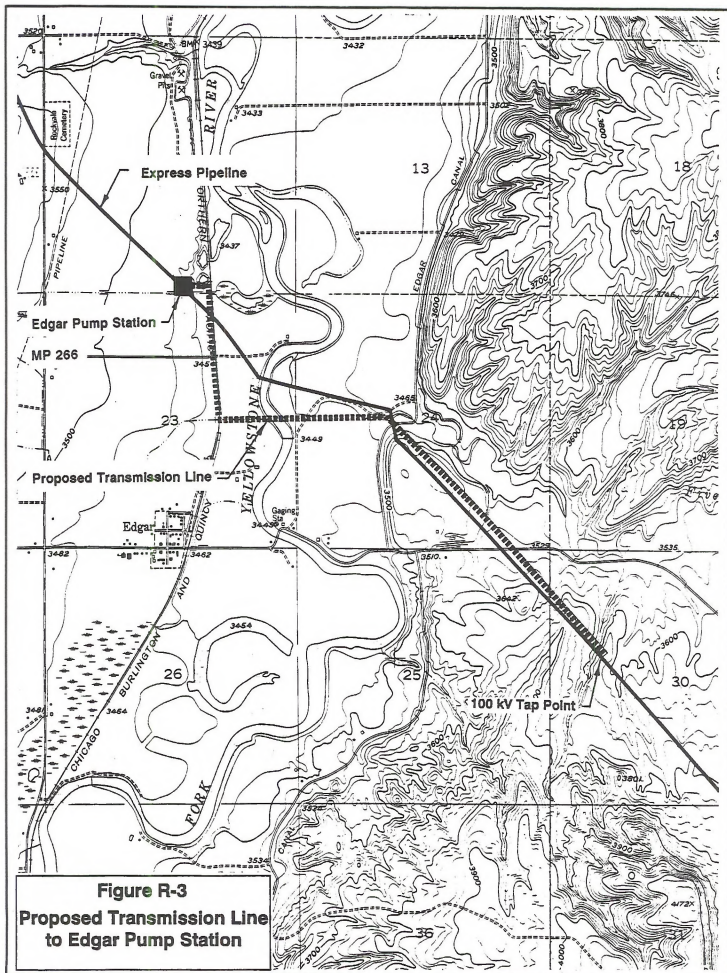
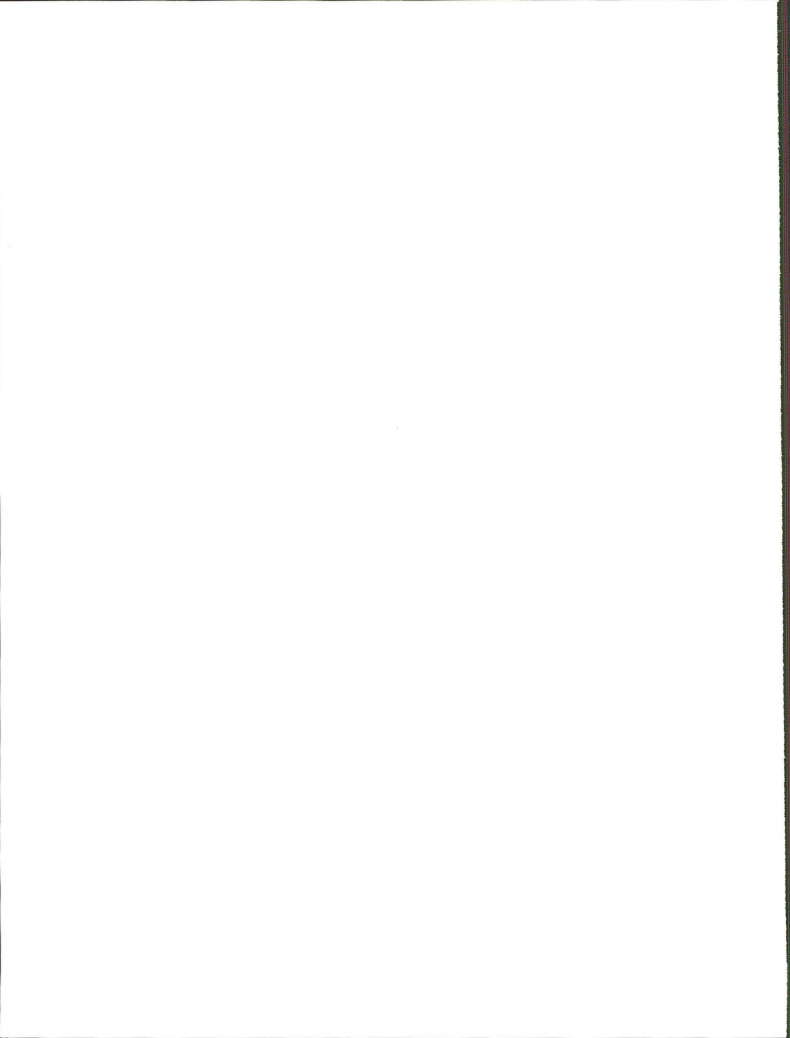
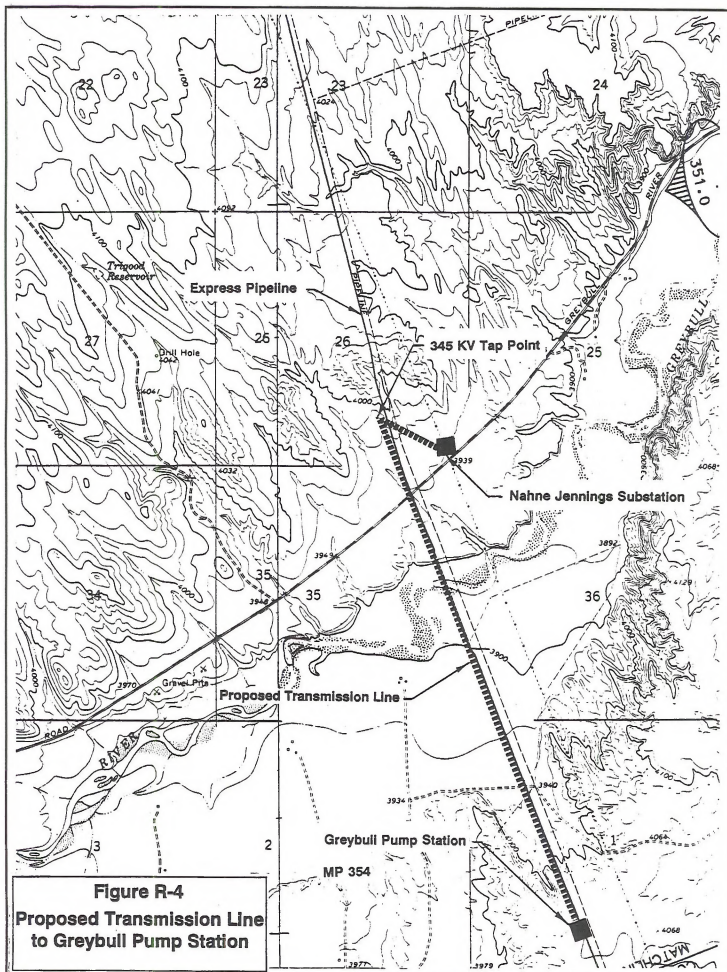
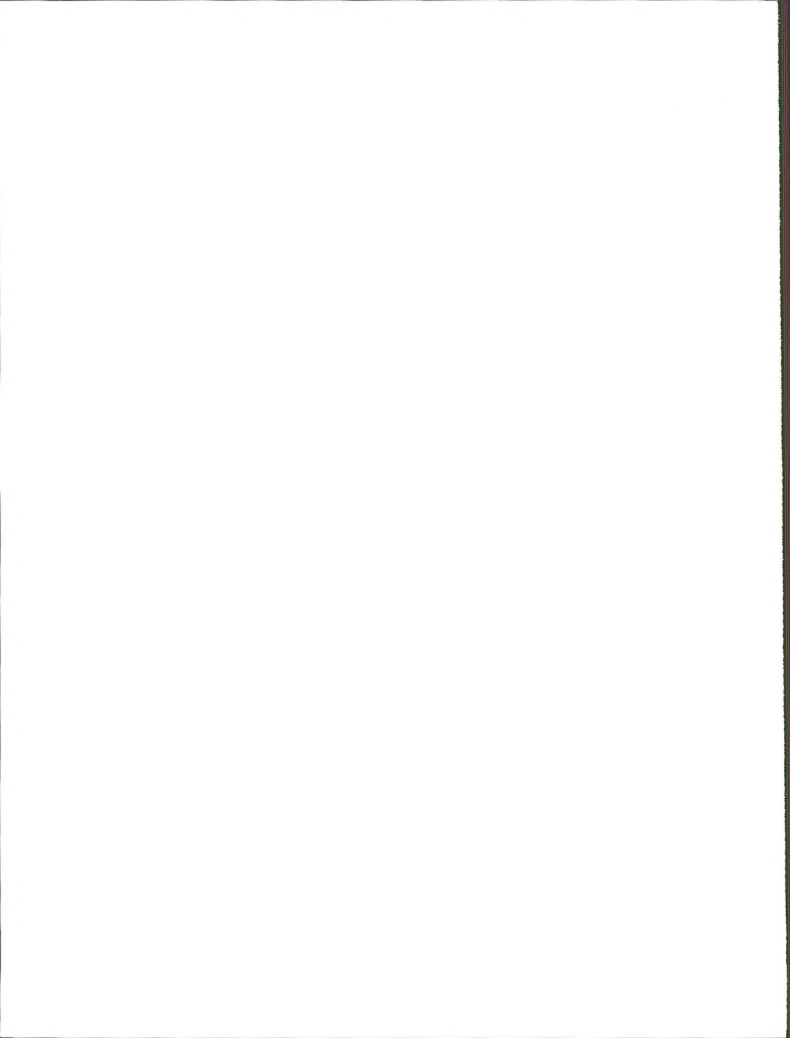


Figure R-3
Proposed Transmission Line
to Edgar Pump Station







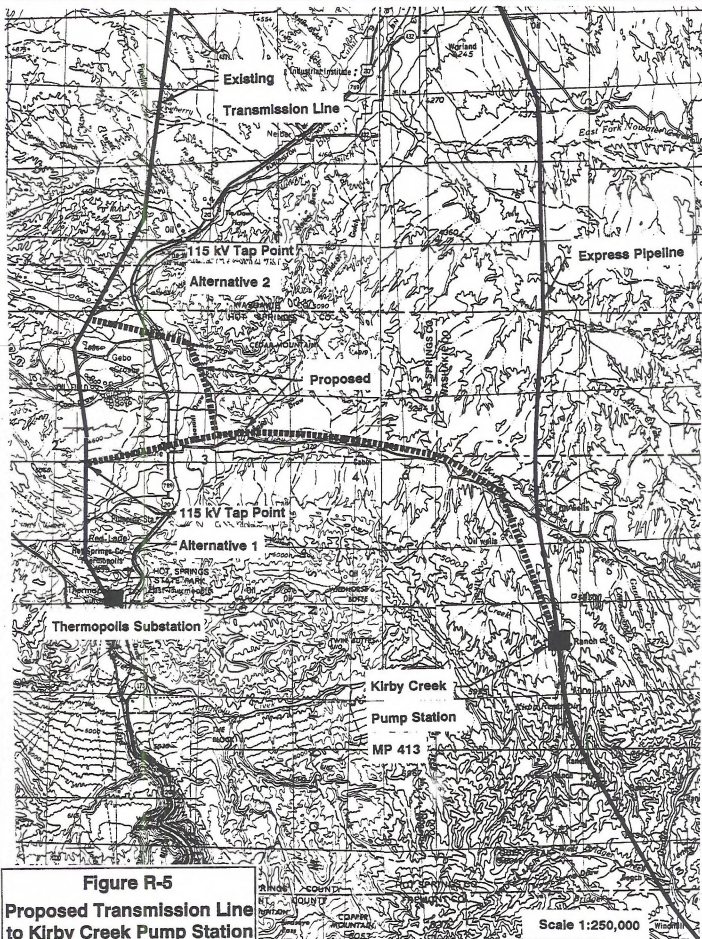
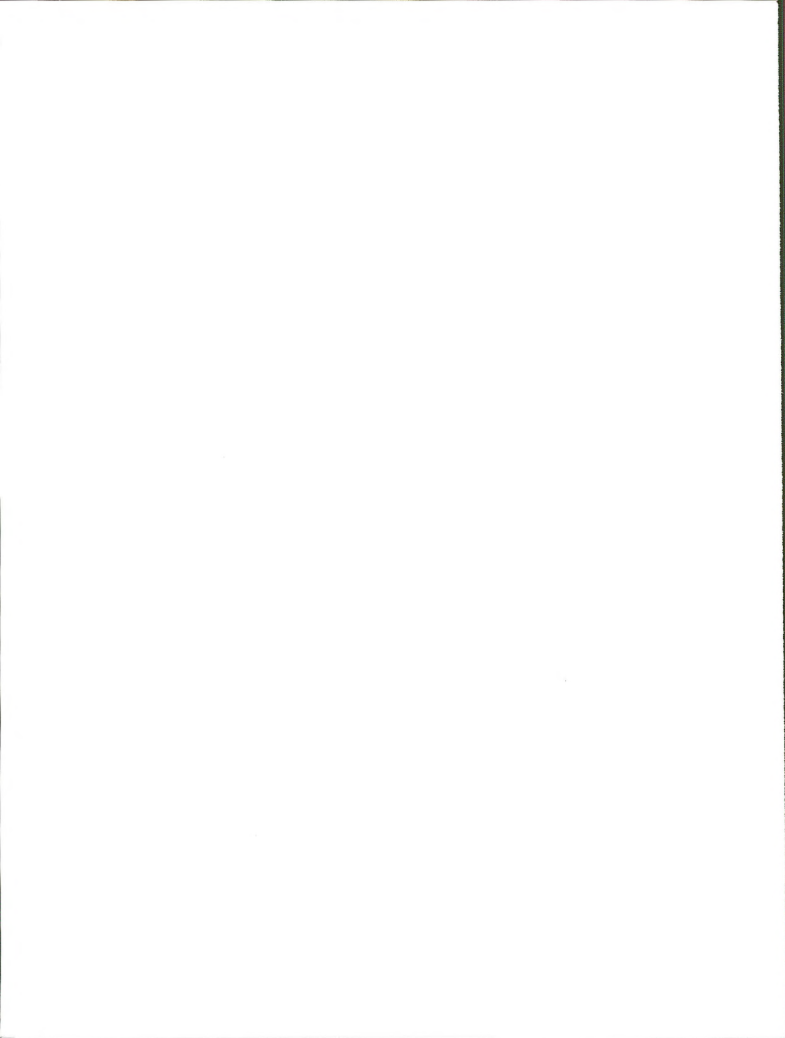


Figure R-5
Proposed Transmission Line
to Kirby Creek Pump Station



Overview of Affected Environment

Most of the area affected by electric line construction to the Eagle Butte pump station is used either for dry land grain farming, cattle grazing, or for county road right of way. Trees are absent from most of this area. The alternative routes pass near several stock ponds and would span several intermittent drainages. Topography is generally flat but is broken by Crow Coulee.

The area that would be affected by the Straw tap is farmed and used for grazing. Trees generally are absent from this area. Topography is flat to gently sloping.

In the Edgar area the proposed electric line would traverse moderate to steep slopes adjacent to Fivemile Creek and would cross level ground in the Clarks Fork river valley. Rangeland vegetation is present in the upland areas adjacent to Fivemile Creek, with riparian trees and shrubs along the Clarks Fork. Much of the remaining area is irrigated cropland.

The proposed power line from the Greybull pump station would traverse gently sloping agricultural land void of trees. The line would cross the Greybull River, its associated wetland vegetation, and the Greybull River Road.

Two options are proposed for the Kirby Creek pump station power line. Both options would tie into an existing transmission line with 115-kV taps. One option would tie into the transmission line about six miles north of the Thermoplis substation, while the other option would be to tap the transmission line about 12 miles north of the Thermoplis substation. The first option would cross Out Creek and several intermittent drainages before crossing U.S. Highway 20. The line would then parallel Wyoming State Road 172 for about 15 miles, and then turn south for six miles over gently sloping terrain to the Kirby Creek pump station. The second option would connect to the transmission line about three miles west of Kirby, Wyoming, extend east for six miles crossing U.S. Highway 20, turn south for about four miles paralleling an unimproved road, and then join the first option route about two miles east of Lucerne, Wyoming. The second option would cross a few intermittent drainages. Generally, both options are devoid of trees.

Potential Impacts

Land Use

Various land uses could be affected by construction of electric lines to pipeline pumping stations. Their uses include agricultural cultivation and grazing.

Agricultural impacts can be either short-term and long-term. Short-term impacts include restrictions on existing irrigation operations during construction, increased potential for introduction of noxious weeds, reduced crop yields due to soil compaction and erosion, and temporary loss of cropland in staging areas and on roads required to reach structure sites. Long-term impacts to agriculture include:

- ▶ possible spread of weeds;
- ▶ loss of cropland under and around structures;
- ▶ interference with farming operations near and around structures;
- ▶ potential damage to equipment such as combines or harrows from accidents;
- ▶ reduced crop yields due to weeds and soil compaction resulting from disrupted farming patterns around structures;
- ▶ replacement or alteration of existing or proposed irrigation systems from poles and overhead wires;
- ▶ location restrictions on future sprinkler systems;
- ▶ interference with aircraft applications of fertilizer, pesticides, and herbicides.

The amount of land permanently removed from production varies with line size, the type and spacing of structures, farming practices, and terrain. An "H-frame" electric structure can remove up to 200 square feet of cropland from production, while a single pole structure would typically occupy 60 to 100 square feet. Any guy wires needed to support a structure take additional space. When it is not possible to avoid crossing cropland, location of structures along existing fence lines and roads along field borders can reduce impacts.

Impacts to cultivated lands include loss of crop production, traffic, dust, noise and erosion. Impacts to grazing land include temporary disturbance of grazing patterns and disruption of animal access to stock water during the construction period. Soil compaction on access roads and trails may cause a decrease in forage production. DEQ's environmental specifications include reclaiming work areas and roads through measures such as disking or deep ripping surfaces and reseeding, and installing gates or replacing fences to control access.

Avoiding the spread of noxious weeds along electric line rights-of-way and access roads is always a concern. Impacts could result from stands of weeds, especially noxious weeds, becoming established on newly disturbed areas, and from the spread of weeds by construction equipment. DEQ would require that nearby weed infestations be located and treated with herbicides at least two weeks prior to construction. A thorough washing of all vehicles would be required to remove seeds before they leave infested areas. DEQ would require prompt reseeding and monitoring of reclamation success for at least five years after construction.

Visual Resources

Concern for visual resources reflect the public's viewing values and expectations. The sensitivity of the landscape to change can effect the degree of impact. Low visual impacts are expected due to the location of proposed lines, low number of viewers, and the proposed facilities themselves.

Social and Economic Effects

Based on the sizes and lengths of proposed lines, no appreciable increases in demand on local schools, water, sewer or solid waste, or police and fire protection services would be expected.

Beneficial effects might result from increased property tax revenues for counties and school districts where facilities would be constructed. The project's taxable property may increase local tax bases slightly.

Soils and Geology

Disturbance of the ground surface and subsurface and removal of vegetative cover during right-of-way clearing, access road construction, and preparation of structure sites increase soil erosion and can cause landslides depending on conditions. These activities also can affect soil productivity and physical characteristics. Potential for erosion would be greatest on hilly terrain adjacent to Crow Coulee and Fivemile Creek where access roads to powerline poles might be required. Less than two miles of land with moderate to high potential for water erosion would be crossed in Montana. Successful erosion controls are expected to limit construction impacts to the short term.

Vegetation

Impacts to vegetation are not expected to be great. Most of the electric lines can be constructed without building new access roads. Vehicles would travel cross country or work from existing county roads.

Floodplains and Wetlands

Impacts to riparian areas and wetlands would be reduced by siting and construction practices that would avoid wetlands whenever possible, placing structures to span these areas, and precluding vehicular access from these areas. Where wetlands or floodplains could not be avoided, appropriate mitigation would be required by DEQ and the BLM. A small amount of riparian vegetation might be cleared to construct the electric line at the crossing of the Clarks Fork in Montana.

Aquatic Resources

The clearing of ground cover during construction of electric lines and access roads can directly result in erosion and consequent sediment increases in streams and rivers, or can combine with other disturbances in watersheds to result in cumulative impacts. Construction of bridges, installation of culverts, and traffic across streams and rivers can alter stream channels and temporarily increase turbidity. Right-of-way clearing for construction or maintenance can damage streambank vegetation, causing an increase in stream sediment. Surface runoff can be increased by soil compaction and removal of vegetative cover. Reclamation and revegetation measures would gradually decrease any construction-related sediment production. Impacts to water quality from electric line construction would be greatest along the steep slopes adjacent to Crow Coulee, Fivemile Creek, and at the Clarks Fork river crossing. Prompt reclamation and successful revegetation would reduce these impacts to insignificant levels in the long-term. With successful reclamation efforts, only minor short-term effects to fish habitat are expected from electric line construction in Montana.

Wildlife

Electric lines can increase collision hazards for waterfowl and other birds flying at low-altitude. Collision potential would increase when line location is near areas of high bird concentration, during migration seasons, and when large numbers of birds may use local bodies of water such as at the crossing of the Clarks Fork and where lines are located near stockponds and wetlands. Use of marker balls or helical wraps on overhead ground wires would increase wire visibility and reduce collisions. Raptors may be electrocuted when perching on improperly designed electric lines. Raptor safe designs (Olendorff et. al. 1981) can reduce or eliminate the chance for electrocution.

Cultural and Native American Resources

Impact on historic and prehistoric resources are expected to be reduced to minimum levels based on the procedures described in the Express Pipeline Programmatic Agreement, Appendix L.

Air Quality

Impacts to local air quality from electric line construction result from construction traffic on paved and unpaved roads and exhaust emissions from equipment and vehicles. They are likely to be short-term.

Electric Line Noise

Electric transmission lines larger than 69-kV can generate a noticeable background "humming" sound near the line, particularly during wet weather. Lower capacity electrical lines (69 kV and smaller) generally create noise that is lower than ambient background levels.

References

- Olendorff, R. R., A. D. Miller, and R. N. Lehman, 1981, suggested practices for raptor protection on powerlines, the state of the art in 1981. Raptor Research Report No. 4, Raptor Research Foundation, Inc., 111 pp.

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